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# Examination of physical activity and life quality levels of university students based on the analysis of the WHOQOL-BREF indicators

# Examen de la actividad física y los niveles de calidad de vida de los estudiantes universitarios basado en el análisis de los indicadores WHOQOL-BREF

*Bakhytzhan Omarov, **Baglan Yermakhanov, ***Almira Ayapbergenova, ****Anuarbek Amanov, *****Aigul Turayeva, ******Talgat Daniyarov

*International University of Tourism and Hospitality (Kazakhstan), **Khoja Akhmet Yassawi International Kazakh-Turkish University (Kazakhstan), ***Kazakh National Women's Teacher Training University (Kazakhstan), ****Khoja Akhmet Yassawi International Kazakh-Turkish University (Kazakhstan), *****Military Institute of Ground Forces named after Sagadat Nurmagambetov (Kazakhstan), ******Khoja Akhmet Yassawi International Kazakh-Turkish University (Kazakhstan)

**Resumen.** Este estudio investiga el impacto de la actividad física en la calidad de vida entre estudiantes universitarios utilizando el cuestionario WHOQOL-BREF, centrado en tres dimensiones principales: salud física, salud psicológica y relaciones sociales. Sesenta estudiantes fueron divididos en dos grupos basados en sus patrones de vida: treinta participaron regularmente en deportes y actividades físicas (Grupo A), y treinta llevaron un estilo de vida predominantemente sedentario (Grupo B). Los resultados destacaron correlaciones positivas significativas entre la actividad física regular y tanto la salud física como la psicológica. Específicamente, el Grupo A mostró puntuaciones superiores en salud física y psicológica en comparación con el Grupo B, sustentando la hipótesis de que la actividad física mejora significativamente estos aspectos de la calidad de vida. Por el contrario, no se encontraron diferencias significativas en las relaciones sociales entre los dos grupos, sugiriendo que la influencia de la actividad física en las interacciones sociales podría ser menos directa y posiblemente moderada por otras variables no medidas. Estos hallazgos subrayan la necesidad de que las universidades fomenten entornos que alienten las actividades físicas, como parte de una estrategia más amplia para mejorar el bienestar general y el rendimiento académico de los estudiantes. El estudio contribuye a la literatura existente al reafirmar los beneficios multifacéticos de la actividad física y llama a la implementación de estrategias integradas de promoción de la salud dentro de las instituciones educativas para apoyar el desarrollo holístico de los estudiantes.
**Palabras clave:** actividad física, estudiantes universitarios, calidad de vida, WHOQOL-BREF, salud psicológica, relaciones sociales, estilo de vida sedentario, promoción de la salud, bienestar estudiantil, política educativa.

**Abstract.** This study investigates the impact of physical activity on the quality of life among university students using the WHOQOL-BREF questionnaire, focusing on three primary dimensions: physical health, psychological health, and social relations. Sixty students were divided into two groups based on their lifestyle patterns: thirty engaged regularly in sports and physical activities (Group A), and thirty led a predominantly sedentary lifestyle (Group B). The results highlighted significant positive correlations between regular physical activity and both physical and psychological health. Specifically, Group A exhibited superior physical and psychological health scores compared to Group B, substantiating the hypothesis that physical activity significantly enhances these aspects of quality of life. Conversely, no significant difference was found in social relations between the two groups, suggesting that the influence of physical activity on social interactions might be less straightforward and possibly moderated by other unmeasured variables. These findings underscore the necessity for universities to foster environments that encourage physical activities, as part of a broader strategy to enhance overall student well-being and academic performance. The study contributes to the existing literature by reaffirming the multifaceted benefits of physical activity and calls for integrated health promotion strategies within educational institutions to support the holistic development of students.
**Keywords:** physical activity, university students, quality of life, WHOQOL-BREF, psychological health, social relations, sedentary lifestyle, health promotion, student well-being, educational policy.

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Bakhytzhan Omarov
bakhytzhanomarov01@gmail.com

## Introduction

The assessment of quality of life and physical activity levels among university students has garnered significant attention in recent research due to its implications for mental and physical health outcomes (Bodziony and Stetson, 2024; Martín-Rodríguez et al., 2024; Akbar et al., 2024; Liu et al. 2023). The World Health Organization's Quality of Life (WHOQOL-BREF) instrument provides a comprehensive measure, reflecting physical, psychological, social, and environmental dimensions of well-being. The relevance of studying these parameters in a university setting is underscored by the transitional nature of university life, which can profoundly impact lifelong habits and health (Skevington et al., 2021). Physical activity is universally acknowledged as a crucial determinant of health (Alam and Rahman, 2023). It has been extensively documented to enhance physical health, mental well-being, and overall quality of life (Oladejo et al., 2023). However, despite the known benefits, studies suggest that physical activity levels often decline during the university years (Saruarov et al., 2024; Omarov et al., 2019). This decline is attributed to increased academic obligations, changes in social structures, and the stress associated with new life roles (Najm & Morelen, 2024).

Quality of life, as a multidimensional construct, encompasses various aspects of an individual's perceived position in life in the context of the culture and value systems in which they live (Sollis et al., 2022; Omarov et al., 2016).

For university students, quality of life is influenced by academic performance, social relationships, physical health, and mental well-being (Pap et al., 2023; Gómez-Rossel and Merellano-Navarro, 2024; Altayeva et al., 2017). The WHOQOL-BREF has been effectively used in numerous studies as a valid and reliable tool to measure these dimensions (Ramji et al., 2023).

The interrelation between physical activity and quality of life is well established, with increased physical activity often correlating with improved scores in both physical and psychological domains of quality of life assessments (Diz et al., 2024). In the context of university students, this relationship warrants further exploration, particularly through longitudinal studies that can provide insights into how physical activity influences quality of life over time (Tao et al., 2024).

Furthermore, environmental and social factors at universities such as facilities for physical activity, academic pressures, and social support systems also play significant roles in shaping students' lifestyle choices and, by extension, their quality of life (Boonekamp et al., 2022). Understanding these factors can help in designing interventions that promote healthier lifestyles among students (Austin et al., 2022).

The significance of this study lies in its potential to influence policy and program development at educational institutions. By identifying key factors that influence physical activity and quality of life, universities can implement targeted interventions to support student health, which is essential for academic success and overall well-being (Herbert, 2022; Altayeva et al., 2016; Brandao-Loureiro et al., 2024). Moreover, this research could contribute to the broader discourse on public health strategies aimed at young adults, particularly in educational settings. In summary, this introductory exploration sets the stage for a detailed examination of the interplay between physical activity and quality of life among university students, with the goal of informing effective health promotion strategies within university settings and beyond.

This research aims to examine the physical activity levels of university students by employing the WHOQOL-BREF instrument. The choice of this instrument is based on its previous applications and proven reliability in various demographic settings, including among young adults in academic environments (Abrantes et al., 2022). By focusing on university students, this study seeks to provide new insights into the impact of academic environments on student health and well-being (Lavados-Romo et al., 2023).

## Related works

The relationship between physical activity and quality of life has been a focal point of research in health sciences, particularly concerning the demographic of university students. This segment explores various studies that have utilized the WHOQOL-BREF instrument to assess quality of life in correlation with physical activity, alongside other factors influencing student well-being in university settings.

### *Physical Activity and Quality of Life*

Studies consistently illustrate that physical activity is a significant predictor of higher quality of life. A meta-analysis by Favieri et al. (2023) synthesized results from over thirty studies, confirming that university students who engaged in regular physical activity reported better overall health and higher quality of life scores, particularly in physical and psychological domains. Similarly, Puciato et al. (2023) identified a positive correlation between physical activity levels and all domains of the WHOQOL-BREF among students, highlighting the broad benefits of exercise on student health and well-being.

The psychological benefits of physical activity, such as reduced symptoms of depression and anxiety, are particularly relevant for university students, a group often vulnerable to mental health challenges (Levante et al., 2024). An interesting study by Murray et al. (2024) demonstrated that physical activity interventions not only improved the physical health of participants but also had a profound impact on their psychological well-being, suggesting the need for integrated health programs in universities.

### *Environmental and Social Influences*

The environment and social context of university life also play critical roles in shaping the physical activity and quality of life among students. Research by Jie (2024) highlighted how campus facilities and student-specific programs could foster a more active lifestyle, thereby enhancing the overall quality of life. Furthermore, the study by Dodds et al., (2024) investigated the impact of social support on the quality of life, finding that students with robust social networks tended to participate more in physical activities and reported higher well-being.

The role of academic stress in student life is another crucial factor. A study by Wang et al. (2024) examined the inverse relationship between academic pressures and both physical activity and quality of life, indicating that high stress could lead to decreased physical activity and diminished quality of life. These findings emphasize the need for stress management interventions within the academic curricula to promote better health outcomes.

### *Longitudinal Studies and Cultural Considerations*

Longitudinal research offers insights into how changes in physical activity over the university years impact quality of life. For instance, Waterworth et al. (2024) conducted a four-year study tracking physical activity trends among university students, linking decreases in activity levels with declines in quality of life scores. This longitudinal approach underscores the dynamic nature of student lifestyles and the enduring impact of physical activity habits formed during university years.

Cultural factors also significantly influence physical activity and quality of life, as demonstrated by the cross-cul-

tural study by Bonneville-Roussy et al. (2024), which compared students from different geographic and cultural backgrounds. The study revealed varying levels of physical activity and different perceptions of quality of life, influenced by cultural norms and societal expectations about health and fitness.

***Implications for University Policies and Programs***

The findings from the reviewed literature underscore the critical role that university policies and programs play in fostering physical activity and enhancing the quality of life among students. Universities are uniquely positioned to create environments that not only promote academic achievement but also holistic student wellness. Effective interventions could include the development of comprehensive wellness programs that integrate physical activity into the daily routine of students, thereby addressing the physical, mental, and social aspects of health concurrently (Yadav et al., 2023).

Furthermore, the establishment of accessible recreational facilities, organized sports events, and fitness classes can encourage regular participation in physical activities. Policy initiatives should also consider the integration of mental health services and stress management resources, recognizing the link between psychological well-being and physical health (Fraboni et al., 2023; Omarov et al., 2017). Additionally, fostering a supportive social environment through clubs and interest groups can enhance social networks, providing both motivational support and a sense of community among students.

Ultimately, university administrators must consider these factors in policy-making to create a supportive environment that promotes not only academic success but also the physical and psychological well-being of students. Such policies not only contribute to a healthier campus culture but also equip students with lifelong habits beneficial beyond their university years.

## Materials and Methods

In the current study, we employed the WHOQOL-BREF questionnaire to assess the quality of life across various dimensions among university students. A cohort of 60 students, equally divided by gender (30 males and 30 females) and spanning from first to third year, participated in the survey. The participants were categorized into two distinct groups based on their physical activity levels over the past six months. One group (Group A) consisted of 30 students (15 males and 15 females) who regularly engaged in sports and physical activities, while the other group (Group B) comprised 30 students (15 males and 15 females) leading a predominantly sedentary lifestyle.

The WHOQOL-BREF instrument facilitated the evaluation of four critical dimensions of quality of life: Physical Health, Psychological Health, Social Relations, and Environmental Factors. The scoring of these dimensions was executed using specified equations to derive a quantifiable measure of each aspect. For Physical Health, the equations (1)-(3) are used.

$$\text{Physical\_health} = 4 \times \frac{(6-Q3)+(6-Q4)+Q10+Q15+Q16+Q17+Q} \quad (1)$$

$$\text{Psychological\_health} = 4 \times \frac{Q5+Q6+Q7+Q11+Q19+(6-Q26)}{6}. \quad (2)$$

$$\text{Social\_relations} = 4 \times \frac{Q20+Q21+Q22}{3}. \quad (3)$$

The study was structured around three primary hypotheses. The first hypothesis addressed the influence of regular sports and physical activities on the physical health of students. The null hypothesis (H0) posited that regular engagement in sports and physical activities does not affect the physical health of students, while the alternative hypothesis (H1) proposed that such activities have a positive effect on physical health.

The second hypothesis examined the potential effects on psychological health. Here, the null hypothesis (H0) suggested that regular physical activity does not impact the psychological health of students. Conversely, the alternative hypothesis (H1) argued for a positive influence of regular physical engagement on psychological well-being.

Lastly, the third hypothesis focused on the dimension of social relations. The null hypothesis (H0) maintained that regular participation in sports and physical activities does not influence the social relations of students. The alternative hypothesis (H1), however, contended that these activities positively affect students' social interactions and relationships.

Through the application of these hypotheses and the detailed analysis of questionnaire results, this study aims to provide a nuanced understanding of how varying levels of physical activity influence the multidimensional aspects of students' lives, thereby informing future interventions and policies at educational institutions to foster enhanced well-being and quality of life among the student population. There, we listed the three hypotheses that we explored in the current study.

## Results

The data presented in Tables 1 and Table 2 aim to evaluate the impact of regular physical activity on the physical health of university students, focusing on the comparison between two distinct groups. Group A includes students who regularly engage in sports and physical activities, while Group B comprises students with a predominantly sedentary lifestyle.

Table 1.
Group Statistics for Hypothesis I

| F | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| 2.243 | Group A | 30 | 18.2857 | .88779 | .16209 |
| | Group B | 30 | 13.8667 | 1.46213 | .26695 |

Table 1 provides a statistical summary of the physical health scores for both groups. Group A exhibits a higher mean score (18.2857) with a lower standard deviation

(0.88779) compared to Group B, which has a mean score of 13.8667 and a higher standard deviation (1.46213). The smaller standard error mean in Group A (0.16209) versus Group B (0.26695) indicates more precision in the estimate of the mean physical health score for Group A, suggesting that active students consistently report better physical health outcomes.

Table 2.
Independent Samples Test Results of Hypothesis I Testing

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Physical Health | Equal variances assumed | 9.333 | .003 | 14.150 | 58 | .000 | 4.41905 | .31230 | 3.79390 | 5.04419 |
| | Equal variances not assumed | | | 14.150 | 47.825 | .000 | 4.41905 | .31230 | 3.79106 | 5.04704 |

Table 2 details the results of the independent samples t-test, which tests the equality of means between the two groups under the assumption of both equal and unequal variances.

The Levene's test results (F=9.333, Sig.=0.003) indicate that the variances between the two groups are statistically significantly different. This outcome justifies the use of the t-test results for unequal variances in subsequent analyses.

The t-test results, under the assumption of unequal variances, reveal a t-value of 14.150 with a degrees of freedom (df) of 47.825, and a highly significant two-tailed p-value ($p<0.0001$). This indicates a very significant difference in mean physical health scores between the two groups. The mean difference (4.41905) with a standard error of the difference (0.31230) further supports a substantial difference in physical health favoring Group A (active students).

The 95% confidence interval for the mean difference ranges from 3.79106 to 5.04704, suggesting a robust effect of physical activity on physical health, which is consistently above zero and not close to it, reinforcing the validity of the results.

The results from both tables robustly support the rejection of the null hypothesis (H0), which stated that regular engagement in sports and physical activities does not affect the physical health of students. Instead, the alternative hypothesis (H1) is strongly supported, indicating that regular physical activity significantly and positively affects the physical health of students. This finding is crucial for university health policy, suggesting that encouraging physical activity among students may lead to improved physical health outcomes.

The results presented in Tables 3 and Table 4 evaluate the impact of regular physical activity on the psychological health of university students by comparing two groups: Group A, which regularly engages in sports and physical activities, and Group B, which leads a predominantly sedentary lifestyle.

Table 3.
Group Statistics for Hypothesis II

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Psychological health | Group A | 30 | 18.1111 | 1.03699 | .18933 |
| | Group B | 30 | 15.0222 | 1.82560 | .33331 |

Table 3 provides the descriptive statistics for the psychological health scores of both groups. Group A, the physically active group, shows a higher mean score (18.1111) with a relatively smaller standard deviation (1.03699) compared to Group B, which has a mean score of 15.0222 and a larger standard deviation (1.82560). The smaller standard error mean in Group A (0.18933) versus Group B (0.33331) suggests that the estimates of the mean psychological health scores are more precise and consistent among the active students.

Table 4.
Independent Samples Test Results of Hypothesis II Testing

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Physical Health | Equal variances assumed | 6.912 | .011 | 8.058 | 58 | .000 | 3.08889 | .38333 | 2.32158 | 3.85620 |
| | Equal variances not assumed | | | 8.058 | 45.949 | .000 | 3.08889 | .38333 | 2.31727 | 3.86051 |

Table 4 details the independent samples t-test aimed at testing the equality of means between the two groups, with considerations for both equal and unequal variances. The results of Levene's test (F=6.912, Sig.=0.011) indicate significant differences in the variances between the two groups. This outcome supports the use of t-test results for unequal variances for more accurate analysis. The t-test under the assumption of unequal variances reveals a t-value of 8.058 with a degrees of freedom (df) of 45.949. The p-value is extremely significant ($p<0.0001$), indicating a substantial difference in the psychological health scores between the two groups. The mean difference is 3.08889 with

a standard error of the difference of 0.38333, further emphasizing the significant impact of regular physical activity on psychological health.

The 95% confidence interval for the mean difference, ranging from 2.31727 to 3.86051, underscores a strong and positive effect of physical activity on psychological health. The interval does not approach zero and is entirely above it, which significantly supports the alternative hypothesis over the null.

The data from Tables 3 and Table 4 decisively support rejecting the null hypothesis (H0), which posited that regular engagement in sports and physical activities does not impact the psychological health of students. Instead, the alternative hypothesis (H1) is robustly affirmed, indicating that regular physical activity substantially and positively influences the psychological health of students. This finding is essential for educational institutions aiming to promote holistic wellness initiatives that encompass not only physical but also mental health benefits.

Tables 5 and Table 6 explore the effects of regular physical activity on social relations among university students, as delineated by Hypothesis III. These tables differentiate between Group A, which actively participates in sports and physical activities, and Group B, which leads a sedentary lifestyle.

Table 5.
Group Statistics for Hypothesis III

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Social health | Group A | 30 | 17.5556 | 1.75367 | .32017 |
| | Group B | 30 | 17.3778 | 1.90127 | .34712 |

Table 5 provides the descriptive statistics for social relations scores. Both groups show similar mean scores, with Group A scoring slightly higher (17.5556) compared to Group B (17.3778). The standard deviations for both groups are fairly close, with Group A at 1.75367 and Group B at 1.90127, indicating a similar spread of scores within each group. The standard error means are also comparable (0.32017 for Group A and 0.34712 for Group B), suggesting that the mean scores are estimated with similar precision.

Table 6.
Independent Samples Test Results of Hypothesis III Testing

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Social Relations | Equal variances assumed | .121 | .729 | .376 | 58 | .708 | .17778 | .47223 | -.76750 | 1.12306 |
| | Equal variances not assumed | | | .376 | 57.625 | .708 | .17778 | .47223 | -.76763 | 1.12319 |

Table 6 details the results from the independent samples t-test used to compare the means of social relations scores between the two groups.

The Levene's Test results (F=0.121, Sig.=0.729) indicate that there are no significant differences in variances between the two groups. This finding supports the use of t-test results under the assumption of equal variances.

The t-test for equality of means, assuming equal variances, shows a t-value of 0.376 with 58 degrees of freedom. The two-tailed p-value is 0.708, which is not statistically significant. The mean difference between the groups is minimal (0.17778) with a standard error difference of 0.47223. The 95% confidence interval for the difference ranges from -0.76750 to 1.12306, crossing zero and indicating no substantial difference between the groups.

The statistical analysis from Tables 5 and Table 6 fails to reject the null hypothesis (H0) for Hypothesis III, which stated that regularly engaging in sports and physical activities does not affect the social relations of students. The data suggest that there is no significant impact of regular physical activity on the social relationships among the students in this study. This outcome highlights that while physical activity may significantly influence physical and psychological health, its effects on social relations might not be as pronounced or may require different conditions or metrics to be observed effectively. Further research could explore additional factors that might influence social interactions more distinctly, or examine different contexts or types of physical activities that might have more direct effects on social relations.

To explore an alternative methodological approach, we tested Hypothesis III using a One-Way Analysis of Variance (ANOVA). This statistical technique was employed to assess whether differences in social relations could be attributed to varying levels of physical activity among university students. Table 7 presents the results of an Analysis of Variance (ANOVA) used to test Hypothesis III, which examines whether regular engagement in sports and physical activities affects the social relations of university students.

The ANOVA is structured to compare the variance in social relations scores between two groups: those who regularly engage in physical activities (Group A) and those who lead a sedentary lifestyle (Group B).

Table 7.
One-Way ANOVA Results for the Impact of Physical Activity on Social Relations among University Students

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .474 | 1 | .474 | .142 | .708 |
| Within Groups | 194.015 | 58 | 3.345 | | |
| Total | 194.489 | 59 | | | |

***Variance Analysis***

- Between Groups: The sum of squares between groups is 0.474, with 1 degree of freedom, resulting in a mean square of 0.474. This value represents the variance in social relations scores that can be attributed to the difference between the active and sedentary groups.
- Within Groups: The sum of squares within groups is significantly higher at 194.015, spread across 58 degrees of freedom, yielding a mean square of 3.345. This indicates that the majority of the variance in social relations scores occurs within each group rather than between the groups.
- Total: The total sum of squares, which encompasses the total variation in social relations scores across all participants, is 194.489 with 59 degrees of freedom.

***F-Statistic and Significance***

- F-Statistic: The F-value calculated from the ANOVA is 0.142. This statistic compares the mean square between groups to the mean square within groups, providing a measure of whether the group means are statistically significantly different from each other.
- Significance (p-value): The significance level of the F-test is 0.708, which is not statistically significant (typically, $p < 0.05$ is considered significant). This high p-value indicates that the differences in social relations scores between the active and sedentary groups are likely due to random variation rather than a true effect of physical activity.

The results from Table 7 do not provide evidence to reject the null hypothesis (H0) for Hypothesis III. The null hypothesis stated that regularly engaging in sports and physical activities does not affect the social relations of students. The ANOVA results support this statement, indicating no significant difference in social relations between students who are physically active and those who are not. This outcome suggests that the impact of physical activity on social relations may not be as direct or as significant as its impact on physical or psychological health. Further research might explore different dimensions or contexts of social relations to better understand under what conditions, if any; physical activity might influence social interactions among university students.

## Discussion

This study aimed to investigate the influence of regular physical activity on various aspects of university students lives, including their physical health, psychological well-being, and social relations. Employing the WHOQOL-BREF questionnaire, the research compared the well-being of students engaged in regular physical activities to those leading a sedentary lifestyle. The findings reveal significant insights that contribute to the existing body of knowledge on the subject and propose implications for university policies and student health programs.

***Physical Health Outcomes***

Consistent with prior research (Omarov et al., 2024; Kurtoğlu et al., 2024; Omarov et al., 2021), our results indicate a substantial positive impact of regular physical activity on the physical health of students. Students in the active group reported significantly higher scores in physical health compared to their sedentary peers. This corroborates the hypothesis that physical activity is a crucial determinant of health, reinforcing the need for universities to encourage sports and physical engagement as part of their health promotion strategies. The physiological benefits of regular exercise, including improved cardiovascular health, better muscle tone, and enhanced immune system functioning, are well-documented (Qiu et al., 2023; Tursynova and Omarov, 2021) and reflected in our findings. The implication for university policies is clear: institutions should facilitate accessible sports facilities and programs to foster a healthier student body.

***Psychological Health Insights***

The analysis also supported the second hypothesis that regular physical activity positively influences psychological health. This is in line with studies by Chen et al. (2024), which have highlighted the mental health benefits of physical activity, including reduced symptoms of depression and anxiety. Our study extends these findings to the university student population, suggesting that engaging in sports can be a vital component of mental health strategies on campuses. Given the increasing prevalence of mental health issues among university students, our results advocate for the integration of physical activity into routine student wellness programs as a preventative and therapeutic measure. These programs could include structured group activities, which not only motivate physical participation but also provide social support, enhancing their psychological impact.

***Social Relations and Physical Activity***

Contrary to the expected outcomes, our study did not find significant differences in the social relations scores between physically active and sedentary students. This finding challenges some aspects of existing literature (Omarov et al., 2024; Tileubay et al., 2024), which suggest that physical activity can enhance social skills and opportunities for social interaction. However, it is crucial to note that the quality and nature of social interactions may differ based on the context in which they occur and the personal preferences of the individuals involved. It is possible that the type of physical activity or the settings in which they are engaged may influence how these activities impact social relations. Future research should explore these nuances more thoroughly, possibly focusing on specific types of activities and their social settings to discern more detailed patterns.

## Limitations and Future Research

While the findings of this study are enlightening, they come with certain limitations. The sample size, although

adequate for preliminary investigation, is relatively small and limited to one geographic location, which may affect the generalizability of the results. Additionally, the self-reported nature of the WHOQOL-BREF questionnaire, while validated, could introduce bias related to personal perception and reporting. Future studies should consider larger and more diverse samples to enhance the generalizability of the findings. Longitudinal research designs could also provide more insights into how the relationships between physical activity and various aspects of quality of life evolve over time.

### Implications for University Policy and Practice

The study's implications for university policy are significant. The clear benefits of physical activity on physical and psychological health suggest that universities should prioritize creating environments that encourage such activities. This could be through the provision of more sports facilities, the introduction of flexible gym hours, or the integration of physical activities into the curriculum. Universities could also consider partnerships with local sports clubs or community organizations to broaden the opportunities available to students.

Moreover, the lack of significant findings related to social relations suggests that universities might need to tailor their social programs differently, possibly by integrating social skill development into physical activity programs or offering a wider range of group activities to cater to diverse student interests and needs.

In summary, this study reaffirms the critical role of physical activity in enhancing the physical and psychological health of university students but raises questions about its impact on social relations. The insights gained call for a proactive response from universities to embed physical health programs into their student wellness initiatives more robustly. As universities continue to evolve in their approach to holistic student health, the integration of physical activity into daily student life remains a promising avenue for fostering a healthier, more vibrant student population.

### Conclusion

The present study systematically explored the relationship between physical activity and various dimensions of quality of life among university students, employing the WHOQOL-BREF questionnaire to assess these effects. The findings compellingly underscore the positive impact of regular physical activity on both the physical and psychological health of students. Specifically, active students demonstrated significantly higher scores in these areas compared to their sedentary peers, confirming the critical role of physical activity in enhancing overall well-being. However, contrary to expectations derived from existing literature, our study did not establish a significant relationship between physical activity and the quality of social interactions among students, suggesting that the impact of physical activities on social relations may be more complex and influenced by factors not captured in this study. These insights have profound implications for university policies and student health programs, highlighting the necessity for educational institutions to actively promote and facilitate physical activities as part of comprehensive wellness strategies. By implementing structured physical activity programs, universities can not only improve the physical and psychological health outcomes for their students but also potentially enhance their academic performance and overall life satisfaction. This research contributes to the growing body of knowledge on the holistic benefits of physical activity and serves as a call to action for integrating health-promotion practices into the educational framework, ensuring that students are supported in all dimensions of their well-being during their formative university years.

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**Datos de los/as autores/as y traductor/a:**


| | | |
|---|---|---|
| Bakhytzhan Omarov | bakhytzhanomarov01@gmail.com | Autor/a |
| Baglan Yermakhanov | baglan.yermakhanov@ayu.edu.kz | Autor/a |
| Almira Ayapbergenova | ayapbergenova.a@qyzpu.edu.kz | Autor/a |
| Anuarbek Amanov | anuarbeek@gmail.com | Autor/a |
| Aigul Turayeva | ayka.tokbolat@mail.ru | Autor/a |
| Talgat Daniyarov | talgat.daniyarov@ayu.edu.kz | Autor/a |
| Bakhytzhan Omarov | bakhytzhanomarov01@gmail.com | Traductor/a |