

Original Article

The Association between Physical Activity and Quality of Life among University Students

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ABSTRACT

Background: The interplay between physical activity and quality of life, especially among university students, is a critical area of research. University years are pivotal for establishing lifestyle habits, yet many students lead predominantly sedentary lives. The health implications of this inactivity are significant, warranting an in-depth examination of the relationship between physical activity levels and perceived quality of life.

Objective: The objective of this study was to investigate the association between physical activity and quality of life among university students, aiming to quantify their activity levels and understand how these levels relate to their overall well-being.

Methods: This observational cross-sectional study was conducted over four months at Nur International University, Superior University, and Fatima Memorial College of Medicine and Dentistry. A non-probability convenience sampling technique was employed to recruit 350 university students aged 18-30 years, who typically sat for 4-5 hours per day and had no history of fatal disease. Data were collected using the International Physical Activity Questionnaire (IPAQ) and the EQ-5D questionnaire. The statistical analysis was performed using SPSS version 25, encompassing descriptive and inferential statistics.

Results: The study found that 96.3% (n=337) of participants engaged in minimal physical activity, 1.1% (n=4) in moderate activity, and 2.6% (n=9) in vigorous physical activity. Regarding quality of life, 41.7% (n=146) reported the best quality, 58.0% (n=203) average, and 0.3% (n=1) worst. A positive correlation was observed between physical activity levels and quality of life, with those engaging in higher levels of physical activity tending to report better quality of life.

Conclusion: The study concludes that there is a positive association between physical activity and quality of life among university students. Most participants displayed minimal physical activity levels, which correlated with an average quality of life. These findings highlight the necessity for interventions to increase physical activity among university students, thus potentially improving their quality of life.

Keywords: Physical Activity, Quality of Life, University Students, Sedentary Lifestyle, Health Promotion.

INTRODUCTION

The relationship between physical activity and quality of life, particularly among university students, is a multifaceted and significant area of study. Physical activity, defined as any bodily movement produced by skeletal muscles resulting in energy expenditure, is a critical element in maintaining and enhancing not only physical health but also mental, psychological, and emotional well-being. It positively influences an individual's perception of quality of life and overall wellness. Recognizing its importance, the World Health Organization recommends that adults aged 18 to 65 years should engage in 150-300 minutes of moderate-intensity aerobic physical activity or 75-150 minutes of vigorous aerobic activity weekly, while also advising a reduction in sedentary behavior (2,3).

Physical activity can be categorized into exercised and non-exercised forms. Exercised physical activity is deliberate, such as jogging, swimming, or playing sports, and varies in intensity from vigorous to low. Non-exercised physical activity, on the other hand, includes everyday activities like gardening, playing with children, or household chores, also varying in intensity. This distinction is crucial as it underscores the broad spectrum of activities that contribute to an active lifestyle (5).

The association between increased physical activity and reduced risk of chronic diseases is well-documented. Regular physical activity safeguards against health problems such as heart disease, obesity, back pain, and type 2 diabetes. It is also known to enhance mental health, muscular and cardiorespiratory fitness, bone health, and immunity. Furthermore, physical activity can mitigate mental health issues such as anxiety, depression, and cognitive disorders. In specific medical conditions like stroke, physical exercise has shown significant benefits, leading to its inclusion in standard treatment guidelines (3,6).

Unfortunately, contemporary research indicates that university students exhibit lower levels of physical activity, which correlates with sleep disturbances and poorer health outcomes. The sedentary lifestyle predominant in this demographic is a contributing factor to various pathologies, including cognitive impairment, mobility limitations, increased mortality risk, weight gain, and poor cardiometabolic health. Additionally, prolonged sedentary behavior is associated with an increased risk of chronic diseases (1,7,8).

Quality of life is a multidimensional concept encompassing physical health, psychological state, personal relationships, and social support. Various factors affect it, including physical activity, diet, financial status, and social environment. A sedentary lifestyle adversely impacts quality of life, with every additional hour of daily sedentary behavior having a negative effect on health. Evidence suggests that individuals who are physically inactive over time face a higher risk of death and various health-related side effects. Therefore, promoting higher levels of physical activity is essential, especially among sedentary individuals (9).

Studies show that university students with higher levels of physical activity generally report better health-related quality of life. There is also a noted discrepancy in quality of life based on gender and educational level, with women reporting lower quality of life compared to men, and individuals with higher education levels reporting better quality of life (10).

This study is essential as university students face numerous stressors, such as peer pressure and different learning methods. Understanding how physical activity influences their lifestyle and quality of life is crucial. This research aims to evaluate the physical activity levels of university students and how these levels affect their quality of life, providing valuable insights for developing strategies to enhance their well-being.

MATERIAL AND METHODS

The methodology of this observational cross-sectional study, conducted over a period of four months following the approval of the synopsis, was meticulously designed to assess the association between physical activity and quality of life among university students. The research was carried out in three distinct educational institutions: Nur International University, Superior University, and Fatima Memorial College of Medicine and Dentistry.

In selecting participants, a non-probability convenience sampling technique was employed. The inclusion criteria were quite specific: male and female students aged between 18 to 30 years, who typically sat for more than 4-5 hours per day, were considered eligible for the study (1). Additionally, students with a history of any fatal disease were excluded from the research to maintain a consistent and healthy baseline across the sample. The calculated sample size for this study was determined to be $n=350$, ensuring a robust and representative dataset.

For the purpose of data collection, two well-established questionnaires were utilized. The International Physical Activity Questionnaire (IPAQ) was selected for its comprehensive approach in evaluating various levels and dimensions of physical activity. Additionally, the EQ-5D questionnaire was employed to assess the quality of life of the participants. These tools are renowned for their reliability and validity in similar research contexts.

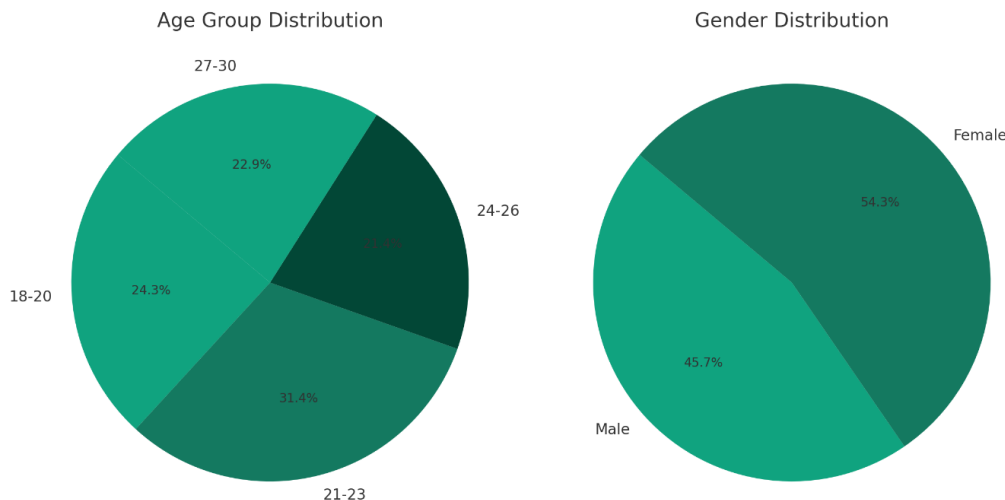
Data collection was executed with precision and ethical considerations. Participants were briefed about the study's objectives and assured of their anonymity and confidentiality in handling their responses. After informed consent was obtained, they were asked to fill out the questionnaires under supervised conditions to ensure the accuracy and integrity of the data.

Once the data collection phase was completed, the data were analyzed using SPSS version 25, a statistical software known for its efficacy in handling complex datasets. This phase involved various statistical techniques to ascertain the relationship between physical activity and quality of life. The analysis included descriptive statistics to provide an overview of the sample characteristics, followed by inferential statistics to explore the associations and correlations within the data. The use of SPSS 25 facilitated a thorough and nuanced analysis, allowing for a comprehensive understanding of the data collected.

RESULTS

In the presented graphical representations, the demographic composition of the study participants is vividly illustrated through two pie charts. The first chart delineates the age group distribution among the participants: 24.3% fall within the 18-20 years range, 31.4% are aged between 21-23 years, those between 24-26 years constitute 21.4%, and the 27-30 years age group comprises 22.9%. This distribution highlights a relatively even spread across the university age spectrum. The second chart focuses on gender

distribution, showing a slight female predominance with 54.3% of the participants being female, compared to 45.7% male. This gender split provides an insight into the slightly higher participation rate of female students in the study.



Together, these charts offer a comprehensive overview of the study's demographic landscape, reflecting a diverse and balanced representation of university-aged individuals with no history of fatal disease, all of whom exhibit sedentary behavior of sitting for 4-5 hours per day.

In the study, the analysis of physical activity levels among the participants, as depicted in Table 1, reveals a significant inclination towards minimal physical activity. Out of the

Figure 1 Demographics

total 350 participants, a striking 96.3% (n=337) reported engaging in minimal physical activity. This suggests a predominantly sedentary lifestyle among the study group. In stark contrast, only a small fraction of the participants reported higher levels of physical activity, with 1.1% (n=4) engaging in moderate physical activity and 2.6% (n=9) partaking in vigorous physical activity.

Turning to the quality of life aspects illustrated in Table 2, the data shows a somewhat balanced distribution. A substantial portion of the participants, 41.7% (n=146), rated their quality of life as the best. However, the majority, accounting for 58.0% (n=203), perceived their quality of life as average. Notably, only a minimal 0.3% (n=1) of the participants rated their quality of life as the worst. This distribution indicates a general trend towards a moderately positive perception of quality of life among the university students.

Table 1 Level of Physical Activity among Participants

Level of Physical Activity	Frequency	Percent (%)
Minimal Physical Activity	337	96.3
Moderate	4	1.1
Vigorous Physical Activity	9	2.6
Total	350	100.0

Table 2 Level of Quality of Life among Participants

Level of Quality of Life	Frequency	Percent (%)
Best	146	41.7
Average	203	58.0
Worst	1	0.3
Total	350	100.0

Table 3 Relationship Between Level of Quality of Life and Level of Physical Activity

Level of Physical Activity	Quality of Life: Best	Quality of Life: Average	Quality of Life: Worst	Total
Minimal Physical Activity	146	190	1	337
Moderate	0	4	0	4
Vigorous Physical Activity	0	9	0	9
Total	146	203	1	350

The intricate relationship between the level of physical activity and the quality of life is further elucidated in Table 3. Among those who engaged in minimal physical activity, a significant number, 43.4% (n=146), reported the best quality of life, while a majority of 56.4% (n=190) rated it as average and a negligible 0.3% (n=1) as the worst. Intriguingly, all the participants who engaged in moderate or vigorous physical activity (n=13) categorized their quality of life as average. This pattern suggests a complex interplay between physical activity levels and perceived quality of life, where minimal physical activity does not necessarily correlate with a lower quality of life, as per the participants' self-assessment.

These results paint a detailed picture of the lifestyle and well-being of university students, highlighting a predominant trend of minimal physical activity and its nuanced association with their perceived quality of life.

DISCUSSION

The primary objective of this study was to explore the relationship between physical activity and quality of life among university students. The results indicated a positive correlation between these two variables, aligning with findings from previous research. For instance, a study by Cicek et al. in 2018 found that 70% of students outside the sports department were minimally active, a figure that closely mirrors the 96% of minimally active students observed in our study (4). This suggests a broader trend of low physical activity among university students, irrespective of their field of study.

Furthermore, the research conducted by Saridi et al. in 2019 resonates with our findings, highlighting that despite the well-known benefits of physical activity, a substantial proportion (80%) of adolescents aged 13 to 15 remains physically inactive. This research also noted that a majority of teenagers (83%) do not engage in any physical activity, an observation that parallels the trends we observed in our study population (10).

Carlos Romero-Morales' research in 2021 hypothesized a moderate negative association between physical activity levels, sedentary behavior, and health-related quality of life. The study included participants aged 18 to 34 years, which corresponds to the age range of our study, particularly noting that our most frequent age range was 21 to 26 years, encompassing 65% of our total population (9). This similarity in demographics strengthens the comparability of our findings.

The increase in screen usage, particularly among the younger population, has also significantly contributed to sedentary lifestyles and reduced physical activity levels. This was evident in a cross-sectional survey of 10,000 students in China, where over 5 hours of daily screen usage was reported, leading to decreased physical activity (17).

To mitigate these trends, it is recommended to create awareness about the importance of exercise and to utilize personalized approaches to motivation and behavioral change. These approaches should include social support and goal setting (18). Motivation plays a crucial role in fostering and maintaining physical activity, especially during university years, a critical period for promoting healthy lifestyles (19).

In terms of methodology, most studies, including ours, utilized the International Physical Activity Questionnaire (IPAQ) to categorize and quantify physical activity levels. While previous research often focused on the association of these categories with various variables, our study sought to correlate the overall IPAQ scores with quality of life. The IPAQ scores could be further refined by incorporating additional details about the specific activities undertaken (20).

The findings of our study underscore a significant issue: most university students do not engage in substantial physical activity, which in turn negatively impacts their quality of life. This positive association between physical activity and quality of life suggests a need for interventions aimed at increasing physical activity levels among university students. The study, while robust in its findings, is not without limitations. The cross-sectional design limits the ability to draw causal inferences, and the reliance on self-reported data may introduce response bias. Future research could focus on longitudinal designs to better understand the causal relationships and explore intervention strategies to enhance physical activity levels and, consequently, the quality of life among university students.

CONCLUSION

In conclusion, this study highlights a crucial link between physical activity and quality of life among university students, underscoring the need for targeted healthcare interventions. The predominantly sedentary lifestyle observed in this demographic adversely impacts their overall well-being, indicating a pressing necessity for strategies that encourage physical activity. Healthcare providers and educators should prioritize awareness campaigns and develop tailored programs that promote active lifestyles, particularly in academic settings. Moreover, integrating physical activity into the daily routine of students could significantly enhance their quality of life, mental health, and academic performance. This research not only adds to the growing body of evidence supporting the benefits of physical activity but also calls for a concerted effort from educational institutions, healthcare systems, and policy-makers to address the physical inactivity epidemic among young adults, ultimately fostering a healthier, more active generation.

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