

## An Examination of the Difference in Stress Levels Between Palestinian University Students Who Do and Do Not Engage in Sports\*

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### Research Article

### ABSTRACT

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This study aims to identify the differences in the level of stress between Palestinian university students who practice sports and those who do not. The stress that university students face in their academics and social life can take a toll on their psychological wellness. Thus, the impact of regular exercise on the level of stress constitutes the primary objective of this study. The quantitative descriptive survey study was conducted from the perspective of descriptive survey model. The population of the study was under graduate students at Birzeit University in Ramallah but 230 students who volunteered in the study in the 2024–2025 academic year were chosen as a sample. 108 of the 230 participants were athletes and the remaining 122 were non athletes. The demographic information form and the Perceived Stress Scale (PSS) was used to collect data, and the data was analyzed using independent samples t-test in SPSS 26.0. According to the results, athletes on average, showed less stress compared to non athletes. Thus, it can be concluded that for Palestinian university students, practicing sport regularly can promote psychological wellness by lowering stress.

Keywords: Palestine, sports, stress, university students, physical activity.

## Spor Yapan ve Yapmayan Filistinli Üniversite Öğrencilerinin Stres Düzeyleri Arasındaki Farkın İncelenmesi

### Araştırma Makalesi

### ÖZET

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Bu çalışma, spor yapan ve yapmayan Filistinli üniversite öğrencileri arasındaki stres düzeylerindeki farkı incelemeyi amaçlamaktadır. Üniversite öğrencilerinin akademik ve sosyal yaşamlarında karşılaştıkları stres, psikolojik iyi oluşlarını olumsuz yönde etkileyebilmektedir. Bu nedenle, düzenli egzersizin stres düzeyi üzerindeki etkisi çalışmanın temel odak noktasını oluşturmaktadır. Araştırma, tanımlayıcı tarama modeli kapsamında nicel betimsel bir çalışma olarak gerçekleştirilmiştir. Araştırmanın örneklemini, Ramallah'taki Birzeit Üniversitesi'nde 2024–2025 akademik yılında gönüllü olarak katılım sağlayan lisans öğrencileri oluşturmuştur. Toplamda 230 öğrenci çalışmaya dahil edilmiş olup, katılımcıların 108'i sporcu, geri kalan 122'si ise sporcu olmayan öğrencilerden oluşmaktadır. Veri toplamak amacıyla Demografik Bilgi Formu ve Algılanan Stres Ölçeği (PSS) kullanılmış; elde edilen veriler SPSS 26.0 programında bağımsız örneklem t-testi yöntemiyle analiz edilmiştir. Analiz sonuçları, spor yapan öğrencilerin ortalama olarak spor yapmayan öğrencilere kıyasla anlamlı biçimde daha düşük stres düzeylerine sahip olduğunu göstermektedir. Dolayısıyla, Filistinli üniversite öğrencileri arasında düzenli egzersiz yapmanın stres düzeylerini azaltmada etkili olduğu ve psikolojik iyi oluşu desteklediği sonucuna varılabilir.

Anahtar Kelimeler: Filistin, spor, stres, üniversite öğrencileri, fiziksel aktivite

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## Introduction

University students today face considerable stress due to academic pressures, family expectations, social transformations, and financial difficulties. In regions such as Palestine, where economic and political conditions are particularly strained, the stress experienced by young people becomes even more complex. At this point, coping mechanisms, lifestyle choices, and especially the level of physical activity play a crucial role. Beyond its well-documented benefits for physical health, participation in sports is essential for developing mental resilience and stress management skills that support psychological well-being (Weinberg & Gould, 2019). Although numerous studies have examined the relationship between sports participation and stress reduction (Vacher et al., 2019; Berger & Motl, 2000), limited research has explored this relationship within diverse cultural and social contexts. In particular, studies focusing on Palestinian university students are scarce, and when available, they primarily emphasize general mental health or academic performance (Abu-Kaf et al., 2021). Therefore, from a scientific standpoint, it is necessary to investigate the differences in stress levels between students who engage in sports activities and those who do not.

This research aims to outline and understand the varying effects of exercise on stress across different cultural and societal settings. Given that this study focuses on university students in Palestine, the findings may contribute to addressing psychological challenges faced by the younger generation and support the incorporation of more targeted mental health initiatives during the university years. Furthermore, the study's outcomes may highlight the importance of integrating physical activity into counseling strategies aimed at reducing stress within educational institutions. Based on this context, the principal research question is: "Is there a difference in the stress levels of Palestinian university students who practice sports and those who do not?"

In response to this question, the study seeks to compare the stress levels of students who participate in sports with those who do not and to determine whether engagement in sports contributes to stress reduction. Accordingly, the hypothesis of the research is stated as follows: "The stress levels of Palestinian university students who engage in sports are lower than those who do not."

## Literature

Stress encompasses a multifaceted set of psychological and physiological reactions triggered by complex social and personal pressures. University studies often represent a period of particularly elevated stress, during which students must simultaneously navigate identity formation, uncertainty about the future, social integration, and academic demands (Misra & Castillo, 2004). Understanding the specific stressors that university students face is therefore critical to safeguarding their mental health. A substantial body of research has confirmed the role of exercise in fostering stress coping mechanisms, psychological resilience, and overall life satisfaction (Weinberg & Gould, 2023). Nevertheless, relatively few studies have explored these relationships within culturally diverse contexts, and even fewer have examined populations residing in areas of acute socio-political unrest.

Palestinian university students represent one such understudied population. They are exposed to compounding stressors arising from ongoing political conflict, economic precarity, restricted mobility, and the normative academic and social pressures of university life. Consequently, examining whether participation in sports differentially affects stress levels in this population constitutes both a theoretically significant and practically urgent contribution to the literature. The following section synthesizes recent and methodologically rigorous empirical studies pertaining to the impact of sports and physical activity on stress, psychological well-being, and mental health outcomes, with particular attention to Palestinian and comparable conflict-affected student populations.

Sabbah et al. (2025) investigated psychological distress, coping mechanisms, and conflict-related stressors among university students in the West Bank, Palestine. Employing a cross-sectional online survey design with a sample of 556 students drawn from multiple universities, the authors assessed psychological distress and coping strategies using validated instruments. Findings revealed high levels of psychological distress and stress attributable predominantly to socio-political conflict. Critically, social support and adaptive coping mechanisms, including regular physical activity, demonstrated significant protec-

tive effects. The study concluded by underscoring the necessity of incorporating physical activity into Palestinian mental health programs and tailoring such interventions to address locally specific stressors.

Alwafa et al. (2024) examined the determinants of quality of life among Palestinian university students in the Hebron district, with physical activity included as a focal variable. Through a cross-sectional survey of 173 students assessed via quality-of-life scales and lifestyle behaviour inventories, the study found a significant positive correlation between physical activity engagement and quality of life. Physical activity was further identified as a moderating factor for stress, improving general well-being. The authors recommended developing locally tailored physical activity promotion programmes as a practical strategy for enhancing student quality of life and alleviating stress.

In a related vein, Ahmead et al. (2024) assessed the prevalence and associated factors of depression and anxiety among Palestinian university students, alongside the coping strategies they employed. Using a cross-sectional design with standardised instruments administered to a broad student sample, the study documented a concerning prevalence of both depression and anxiety. Active coping strategies, including social support utilisation and engagement in physical activity, were associated with more favourable mental health outcomes. These findings suggest that targeted interventions promoting physical activity may hold particular value in contexts characterised by chronic psychosocial stressors.

Awad et al. (2025) explored the relationship between sedentary and physically active lifestyle behaviours, back pain, and stress among West Bank university students. Drawing on a large cross-sectional sample and examining multiple lifestyle and health indicators, the study found that students with lower levels of physical activity reported poorer general health and higher perceived stress. These results emphasise the dual physical and psychological burden of inactivity and point to the importance of health promotion initiatives that target increased physical activity among university students in the Palestinian context.

Beyond the Palestinian context, converging international evidence further substantiates the psychological benefits of exercise for university students. Hu et al. (2025) examined the effects of a structured exercise intervention on self-efficacy, stress, and emotion self-regulation in a university sample, employing a controlled experimental design with pre- and post-test measurements. The findings demonstrated that consistent participation in exercise improved emotion self-regulation and self-efficacy, thereby contributing to meaningful reductions in perceived stress. The authors advocated for the systematic integration of exercise interventions into university mental health support structures as a cost-effective and evidence-based strategy.

Similarly, Tan (2020) investigated the relationships among physical activity, sedentary time, and perceived stress in a cross-national sample of university-aged young adults, utilising cross-sectional survey data. Statistical analyses revealed that participants engaging in regular physical activity reported significantly lower perceived stress than those who spent extended periods in sedentary activities, the latter being associated with elevated stress levels. The study recommended that universities actively promote student physical activity participation as a means of improving adaptive coping and reducing overall stress burden.

Taken together, the studies reviewed above provide compelling evidence for the psychological benefits of physical activity and sport participation in university populations. Students who exercise consistently demonstrate significant reductions in perceived stress, enhanced self-efficacy, and improved emotional regulation (Hu et al., 2025; Tan, 2020). Within the Palestinian context specifically, students face chronic and compounding stressors rooted in socio-political conflict and academic pressure; however, evidence suggests that engagement in sport and physical activity may serve as a meaningful protective factor against these adverse effects (Sabbah et al., 2025; Alwafa et al., 2024; Ahmead et al., 2024).

Despite this accumulating evidence, a notable gap remains in the literature. Few studies have systematically and rigorously examined differences in stress levels between Palestinian university students who participate in organised sport and those who do not. Moreover, the mechanisms by which physical activity may bolster psychosocial resilience within this specific sociopolitical context remain insufficiently theorised. This study therefore seeks to address this gap by empirically determining the difference in stress levels between sport-participating and non-participating Palestinian university students, and by analysing the role of physical activity as a facilitator of psychosocial resilience in this underrepresented yet critically important context.

## Method

### Research Design

The study adopts a descriptive survey model. In line with the research purpose, the analysis of differences in stress levels between Palestinian university students who participate in sports and those who do not can be conducted in an objective manner (Karasar, 2020). Descriptive research designs are characterized by the systematic observation of phenomena in their natural settings without manipulation of variables. Accordingly, this study examines students' stress levels in the absence of any experimental intervention. This design is appropriate for analyzing the socio-psychological context of students, particularly within the post-war psychological stress environment, as supported by existing literature. The study therefore aims to identify differences between stress levels and sports participation within a correlational framework while maintaining an observational approach that avoids experimental control of variables. Descriptive survey models are widely used in the literature to examine relationships between sports participation and stress levels (Creswell & Creswell, 2018; Büyüköztürk et al., 2020).

### Population and Sample

This research was conducted among undergraduate students at Birzeit University in Ramallah, Palestine. The selection of university students is appropriate for examining the relationship between sports participation and stress levels, as this population represents a key demographic for investigating psychosocial stressors within higher education contexts. The study population consisted of students from various faculties, aged between 18 and 26 years, during the 2024–2025 academic year. The final sample comprised 230 voluntary participants. Of these, 108 students (47.0%) reported regular participation in sports activities, while 122 students (53.0%) reported no engagement in sports (Table 2). The sampling strategy was based on criterion sampling, which involves the inclusion of participants who meet predefined inclusion criteria (Büyüköztürk et al., 2020). In this study, inclusion criteria were being an enrolled undergraduate student within the specified age range and willingness to participate voluntarily. Regarding demographic characteristics, 151 participants (65.7%) were male and 79 (34.3%) were female (Table 1). Most participants reported residing in urban areas and generally perceived university life as stressful (Table 1). In relation to sports participation, it is essential to specify the type and frequency of physical activity, as these variables are critical for interpreting associations with stress levels. Regular participation typically refers to engagement in structured or unstructured physical activity such as football, basketball, gym-based training, or running at least 2–3 times per week, consistent with operational definitions used in prior studies on university populations (World Health Organization, 2020; ACSM, 2021). From a methodological perspective, the sample size of 230 participants is considered adequate for correlational and group-comparison analyses. According to established statistical guidance, sample sizes above 200 are generally sufficient for detecting medium effect sizes in social science research using t-tests and correlation analyses (Cohen, 1992; Field, 2018). Therefore, the current sample provides a reliable basis for examining differences in stress levels between students who participate in sports and those who do not. Overall, this sample offers a suitable empirical foundation for investigating stress levels among Palestinian university students and the potential psychological implications of sports participation.

### Data Collection Instruments

During the current research, the Perceived Stress Scale (PSS) was used as a measure of participants' stress levels. The PSS is among the most widely used instruments to quantify individuals' subjective experiences of stress during the past month (Cohen et al., 1983). The PSS is made up of 10 items rated on a five-point Likert scale from 0 ("Never") to 4 ("Very often"). The sum score obtained

by the scale indicates the perceived stress of the individual; the higher the sum score, the higher the level of perceived stress. The validity and reliability of PSS have been confirmed in various cultural contexts. The Cronbach's alpha reliability coefficient in the original study was 0.78 (Cohen et al., 1983). The adaptation research in Turkey and Palestine has also indicated that the scale is reliable with high levels, with alpha coefficients ranging from 0.75 to 0.82 (Eskin et al., 2013). Therefore, the PSS was endorsed as a proper, legal, and correct data-gathering instrument in the context of the research. In addition, a demographic data sheet was used to determine participants' context and demographic variables. The sheet obtained items such as gender and participation in sports activity and the area of residence.

### **Data Collection Procedure**

Data were collected during the Spring semester of the 2024–2025 academic year from students enrolled at Birzeit University. Prior to participation, students were informed about the aim of the study, the voluntary nature of participation, and confidentiality assurances. Informed consent was obtained from all participants. Data collection was conducted using both classroom-based administration and online distribution, depending on participant accessibility. The PSS and the demographic questionnaire were administered in a structured sequence. Participants were instructed to respond based on their personal experiences over the past month, and clarification was provided when necessary to ensure accurate understanding of the items. Completed questionnaires were reviewed for completeness before data entry. Responses were then coded and entered into IBM SPSS Statistics version 26.0 for further analysis. The dataset was organized according to the study variables, where sports participation was defined as the independent variable (categorized as “yes” or “no”), and perceived stress (PSS total score) was defined as the dependent variable. Prior to statistical analysis, data were screened for missing values and entry errors, and incomplete responses were excluded from the final dataset.

### **Data Analysis**

The data gathered for this research were analyzed following the procedures of quantitative research methodology. In this study, the dependent variable was the stress level, measured by the total PSS score, while the independent variable was exercise participation (categorized as exercising or not exercising). Data analysis was carried out using IBM SPSS Statistics version 26.0. Initially, descriptive statistics were applied to summarize the participants' demographic information and exercise status. For categorical variables such as gender and exercise status, frequencies and percentages were reported. For continuous variables, measures including mean, standard deviation, minimum, and maximum values were computed. These descriptive results provided a general overview of the demographic and contextual structure of the study sample. Subsequently, the normality of the stress level scores was assessed through the Kolmogorov–Smirnov and Shapiro–Wilk tests. As the normality assumption was satisfied, the Independent Samples t-test was conducted to determine whether there were statistically significant differences in stress levels between students who exercised and those who did not. The t-test, a parametric statistical test, compares the mean scores of two unrelated groups to detect meaningful differences (Büyüköztürk et al., 2020). Before performing the t-test, the homogeneity of variances across the two groups was evaluated using Levene's Test. When the Levene test result indicated  $p > 0.05$ , the assumption of equal variances was accepted, and the t-test results were interpreted under the “Equal variances assumed” condition. Finally, the mean stress scores of the exercising and non-exercising participants were compared, and the outcomes were interpreted based on the statistical significance threshold of  $p < 0.05$ .

### **Ethical Considerations**

The study titled “Spor Yapan ve Yapmayan Filistinli Üniversite Öğrencilerinin Stres Düzeyleri Arasındaki Farkın İncelenmesi” was reviewed and approved by the Kütahya Dumlupınar University Social and Hu-

manities Scientific Research and Publication Ethics Committee in its meeting dated 27.11.2025 (Meeting No: 2025/11), decision number 48, based on the application dated 26.11.2025 (No: 458). Ethical approval was granted for the use of surveys, interviews, and data collection instruments within the scope of the study, provided that all necessary permissions are obtained. It was also stated that all legal, intellectual, and copyright responsibilities related to the instruments used in the study belong to the researcher. Informed consent was obtained from all participants included in the study.

## Findings

In this section, the findings obtained in line with the objectives of the study are presented. The findings are organized under the headings of the participants' demographic characteristics and the comparison of stress levels according to their exercise status. The data are supported by tables and statistical analyses.

### Findings Related to the Demographic Characteristics of the Participants

**Table 1**

*Gender Distribution of Participants*

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male   | 151       | 65.7           |
| Female | 79        | 34.3           |
| Total  | 230       | 100.0          |

The study sample consisted of 230 university students. Among them, 65.7% identified as male, while 34.3% identified as female. The detailed gender distribution of the participants is summarized in Table 1.

**Table 2**

*Distribution of Participants by Exercise Status*

| Exercise Status | Frequency | Percentage (%) |
|-----------------|-----------|----------------|
| Yes             | 108       | 47.0           |
| No              | 122       | 53.0           |
| Total           | 230       | 100.0          |

When the distribution of the participants according to their exercise status was examined, it was found that 47.0% exercised regularly, while 53.0% did not engage in exercise (Table 2).

**Table 3**

*Comparison of Stress Levels and Mean Differences of All Students According to Exercise Status Using the Independent Samples t-Test*

| Group          | n   | $\bar{x}$ | SD    | t       | p     |
|----------------|-----|-----------|-------|---------|-------|
| Exercising     | 108 | 1,801     | 0,309 |         |       |
| Not exercising | 122 | 2,383     | 0,306 |         |       |
| Total          |     |           |       | -14,347 | 0,000 |

According to the results of the independent samples t-test, the mean stress level of students who exercised ( $\bar{x} = 1.801$ ;  $SD = 0.309$ ) was significantly lower than that of students who did not exercise ( $\bar{x} = 2.383$ ;  $SD = 0.306$ ) ( $t = -14.347$ ;  $p < 0.001$ ). This finding indicates that engaging in exercise has a stress-reducing effect (Table 3).

**Table 4**

*Comparison of Stress Levels and Mean Differences of Male Students According to Exercise Status Using the Independent Samples t-Test*

| Group          | n  | $\bar{x}$ | SD    | t       | p     |
|----------------|----|-----------|-------|---------|-------|
| Exercising     | 70 | 1,773     | 0,330 |         |       |
| Not exercising | 81 | 2,377     | 0,320 |         |       |
| Total          |    |           |       | -11,387 | 0,000 |

According to the results of the independent samples t-test conducted among male students, the mean stress level of male students who exercised ( $\bar{x} = 1.773$ ;  $SD = 0.330$ ) was significantly lower than that of male students who did not exercise ( $\bar{x} = 2.377$ ;  $SD = 0.320$ ) ( $t = -11.387$ ;  $p < 0.001$ ) (Table 4).

**Table 5**

*Comparison of Stress Levels and Mean Differences of Female Students According to Exercise Status Using the Independent Samples t-Test*

| Group          | n  | $\bar{x}$ | SD    | t      | p     |
|----------------|----|-----------|-------|--------|-------|
| Exercising     | 38 | 1,853     | 0,261 |        |       |
| Not exercising | 41 | 2,395     | 0,277 |        |       |
| Total          |    |           |       | -8,938 | 0,000 |

According to the analysis conducted among female students, the mean stress level of those who exercised ( $\bar{x} = 1.853$ ;  $SD = 0.261$ ) was significantly lower than that of those who did not exercise ( $\bar{x} = 2.395$ ;  $SD = 0.277$ ) ( $t = -8.938$ ;  $p < 0.001$ ) (Table 5).

### Conclusion and Discussion

The primary objective of this study was to examine whether stress levels among Palestinian university students vary according to their regular participation in exercise. The results revealed that students who engaged in consistent physical activity exhibited lower levels of stress compared with those who did not maintain a regular exercise routine. These outcomes are consistent with existing research emphasizing the beneficial influence of physical activity on psychological stress.

Specifically, the findings indicated that students who exercise on a daily basis tend to experience reduced stress relative to their inactive peers. This observation aligns with the studies of Eker (2024) and Ambarish et al. (2012). According to Eker (2024), regular exercise contributes positively to mental well-being, fostering greater happiness, life satisfaction, and lower depressive symptoms. Similarly, Ambarish et al. (2012) reported that engaging in moderate, habitual physical activity can mitigate inflammatory responses triggered by stress. Furthermore, Stults-Kolehmainen and Sinha (2014) explored the relationship between stress and exercise participation, concluding that elevated stress levels may reduce individuals' motivation to engage in physical activity.

In this research, stress levels were examined in relation to exercise participation among both male and female students. The results demonstrated that students who engaged in regular exercise reported lower stress levels compared to those who were physically inactive. This finding provides strong evidence that exercise serves as an effective means of reducing stress among both genders. Nonetheless, the observation that male students exhibited higher stress levels than their female counterparts suggests the influence of socio-economic and cultural factors. This may reflect the greater social and political pressures placed on men within the Palestinian context, where males are often exposed to more demanding external expectations and responsibilities.

Another significant factor shaping the mental health of university students is the broader social and political environment in Palestine. For instance, Ghanem (2024) explored gender differences in mental health and health-promoting behaviors among Palestinian medical students. The study found that although male students tended to participate in more physical activity, female students reported better mental health outcomes. This result highlights the potential role of cultural and societal influences in explaining gender-based disparities in mental well-being. One of the limitations of the present study is that it included only students from Birzeit University, focusing on those aged 18 to 26 years. Consequently, the results may not be fully generalizable to students from other universities or different age groups. Future research should therefore aim to include a more diverse population sample. Additionally, investigating variables such as exercise type, duration, and intensity could yield a more nuanced understanding of how physical activity contributes to stress reduction.

Overall, the findings underscore the importance of integrating regular exercise into university-based stress management initiatives. Providing students with accessible opportunities for physical activity can play a crucial role in lowering stress levels and enhancing their psychological well-being. Moreover, subsequent studies should continue to explore specific exercise-related factors including frequency, type, and duration to clarify the mechanisms underlying the positive effects of exercise on stress relief.

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