Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v31i6.6814

OBSERVATIONAL ANALYSIS OF EXERCISE PARTICIPATION, PREFERENCES AND PATTERNS AMONG UNIVERSITY STUDENTS

Samraiz Mughal[1], Hooria Tayyab[2], Ansa Ijaz[3], Tariq Aziz[4], Mohsana Tariq[5], Maryam Razzaq[6], Muhammad Mudassar[7]*, Muhammad Akram[8], Janeeta Javaid[9], Sabira Sultana[10], Hira Younas[11], Momina Iftikhar[12]

[1,2,3,4,6,9,11]Department of Physical Therapy, Government College University, Faisalabad, Pakistan
[5]Department of Allied Health Sciences, University of Sargodha, Pakistan
[7*]College of Allied Health Professionals, Government College University, Faisalabad, Pakistan
[10,12]Department of Eastern Medicine, Government College University, Faisalabad, Pakistan

***Corresponding Author:** Muhammad Mudassar
Email Address: drmmudassar@gcuf.edu.pk

Abstract
University students are particularly prone to adopting sedentary tendencies. Numerous surveys suggest that the shift to university studies is frequently linked with diminished exercise behavior and heightened sedentary conduct due to lifestyle alterations.
Aims and Objectives: This study assessed findings in university students' exercise preferences, patterns, and participation.
Material and Methodology: This investigation constituted a cross-sectional study involving 1500 university students. Data was chosen by simple random sampling from four universities in Faisalabad, Pakistan. Informed consent was procured from all individuals, underscoring the voluntary nature of their participation. Following participant recruitment, a demographic survey was administered, including information such as age, academic major, and exercise history. It used a customized questionnaire for Exercise Participation, Patterns, and Preferences as a data collection tool. The findings were analyzed by using SPSS.
Results: The study's findings revealed that over half of the students exercise regularly. Walking, competitive outdoor activities, running, and cycling are the most popular forms of exercise, with many students exercising multiple times a week, often outdoors. Students access information on exercise benefits from academics. The p-value for the Association of Gender with Exercise Participation is 0.000**.**
Conclusion: There is a significant engagement in physical activity among university students, and efforts should be made to address the barriers faced by those who are inactive.

Keywords: Exercise, Patterns, Preferences, Participation, University Student

Introduction

Modern technology has changed young people's lifestyles, affecting interaction, activity, and sleep. Poor sleep quality impacts 60%-70% of young adults, linked to diet, Internet use, and irregular bedtimes. Females and freshmen sleep worse. Physical activity improves health [1]. Exercise is crucial for energy balance and fat mobilization, directing fatty acids to muscles and reducing fat storage.

Regular exercise enhances this effect. Active people typically have lower fat mass, and exercise improves metabolic health by positively impacting adipose tissue [2].

Physical activity is any movement by skeletal muscles that expends energy. Lack of it is a major risk factor for non-communicable diseases (NCDs). Regular exercise reduces the risk of coronary artery disease, diabetes, obesity, hypertension, and joint diseases. In Muslim countries, cultural norms restrict women's physical activity by limiting mixed-gender exercise settings. University students who exercise regularly report better sleep quality [3]. Exercise, structured for fitness, differs from general physical activity. Clear definitions aid healthcare in addressing physical inactivity, a modifiable disease risk. Nursing should encourage activity, be it through structured exercise or increased daily movement, with clear patient communication. Research on behavior change requires precise definitions and reproducible methods [4].

Physical exercise induces physiological changes that can reduce stress levels and improve mood. Elevated endorphin levels post-exercise are associated with feelings of euphoria. This buffering effect may protect against the negative health impacts of stress [5]. College students spend approximately 7.29 hours per day in sedentary activities. When measured using accelerometers, this increases to an average of 9.82 hours per day. Computer use is the most prevalent form of screen time among college students. Additionally, meta-regression analyses suggest that sitting time has increased over the past 10 years [6]. Significant life changes occur during college, including transitioning from intense entrance exam competition to increased opportunities for drinking, smoking, and job searching. Korean college students lack physical activity, which remains stagnant after high school and is only half the level of their American counterparts. Non-physical education majors rarely engage in physical activity. Additionally, the growing use of smartphones, computer games, and TV contributes to increased sedentary behavior compared to physical activity [7].

Diet and physical activity affect the health of adults and children. Widespread physical inactivity is a public health concern, impacting fitness levels. Socioeconomic factors influence health-related fitness, with low socioeconomic status limiting access to physical activity opportunities. The affordability of healthy foods versus fast food also affects health [8]. Daily physical activity can prevent and enhance overall physical and mental health, including stress reduction. It is crucial for prevention and intervention programs to identify factors like stress and emotion that influence activity levels. Utilizing healthy coping mechanisms rather than resorting to unhealthy behaviors, such as smoking and overeating, is essential. Research also suggests that physical activity can lower stress levels [9]. College students benefit from engaging in various sports events that serve different functions. Physical activity is key in promoting health and managing emotions among students. Short-term exercise interventions can reduce stress, depression, and anxiety levels, improving overall well-being. Regular exercise helps alleviate anxiety and depression, supporting mental health. Aerobic exercises, traditional Chinese exercises, and meditation effectively improve depressive symptoms in college students. Aerobic exercise is effective for anxiety and stress, while conventional Chinese training is better for stress reduction [10].

University students face physical, social, and psychological changes affecting their physical activity. Despite sedentary behaviors like attending classes, staying active is crucial at this stage to shape future health patterns. Obesity from inactivity can lead to long-term health issues [11].

Methodology

The data collection procedure involved several sequential steps to ensure systematic and Comprehensive data gathering: The sample size for this study was 1500 calculated through RAOSOFT.COM. Participants were recruited from various academic departments within the universities of Faisalabad including Government College University Faisalabad, Agriculture University Faisalabad, The University of Faisalabad, and The Ripha University of Faisalabad to ensure diversity and representation. Detailed information about the study objectives, procedures, potential risks, and benefits was provided to participants. Written informed consent was obtained from each participant, indicating their voluntary participation and understanding of the study's

implications. Participants completed a demographic survey, providing information on age, academic major, and exercise history. The customized Questionnaire for exercise participation, preferences, and patterns was administered to collect data on exercise behaviors. Likert scale-based questionnaires were utilized to assess exercise preferences, patterns, and participation levels among participants. Observers ensured confidentiality and privacy to encourage honest responses from participants. Quantitative data from surveys were combined with qualitative insights obtained from focus groups and observations. Triangulation of data sources was performed to enhance the validity and reliability of the findings. Data were analyzed using statistical software (e.g., SPSS 27.0) to identify patterns, associations, and differences in exercise behaviors between male and female students.

Results

The study's findings revealed that over half of the students exercise regularly. Walking, competitive outdoor activities, running, and cycling are the most popular forms of exercise, with many students exercising multiple times a week, often outdoors. The primary motivations for exercising include physical fitness, muscle building, and weight loss. Students access information on exercise benefits from academics.

Table 1. Gender of student

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	705	47.0	47.0	47.0
	Male	795	53.0	53.0	100.0
	Total	1500	100.0	100.0	

The frequency distribution of gender of students shows 47.0% were female and 53.0% were male.

Table 2. Exercise Participation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	827	55.1	55.1	55.1
	No	673	44.9	44.9	100.0
	Total	1500	100.0	100.0	

Frequency distribution of exercise participation shows that (55.1%) were participating in exercise and (44.9%)

Table 3. Association of Gender with Exercise Participation

1. What types of exercise activities do you prefer? Crosstab

		Gender of student				Total	
		Female		Male			
		N	%	N	%	N	%
1. What types of exercise activities do you prefer	Walking	78	22.7%	94	19.4%	172	20.8%
	Jogging	15	4.4%	26	5.4%	41	5.0%
	Running	26	7.6%	110	22.7%	136	16.4%
	Cycling	74	21.6%	44	9.1%	118	14.3%
	Competitive outdoor	28	8.2%	127	26.2%	155	18.7%
	Gym workouts	58	16.9%	42	8.7%	100	12.1%
	Yoga	0	0.0%	12	2.5%	12	1.5%
	Stretching	12	3.5%	29	6.0%	41	5.0%
	Dance	52	15.2%	0	0.0%	52	6.3%
Total		343	100.0%	484	100.0%	827	100.0%

Chi-Square Test

	Value	P value
Pearson Chi-Square	182.042	.000

Likelihood Ration	210.853	.000
Linear by linear Association	15.215	.000

2. How frequently do you participate in physical exercise activities per week?
Crosstab

		Gender of student				Total	
		Female		Male			
		N	%	N	%	N	%
2. How frequently do you participate in physical exercise activities per week?	1-2 Days	0	0.0%	12	2.5%	12	1.5%
	3-4 Days	171	49.9%	282	58.3%	453	54.8%
	5-6 Days	126	36.7%	107	22.1%	233	28.2%
	7 Days	46	13.4%	83	17.1%	129	15.6%
Total		343	100.0%	484	100.0%	827	100.0%

Chi-Square Test

	Value	P value
Pearson Chi-Square	28.138	.000
Likelihood Ration	32.269	.000
Linear by linear Association	3.181	.075

3. Why do you perform exercise?
Crosstab

		Gender of student				Total	
		Female		Male			
		N	%	N	%	N	%
3. Why do you perform exercise?	To be physically fit and active	121	35.3%	225	46.5%	346	41.8%
	Lose weight	55	16.0%	97	20.0%	152	18.4%
	Build muscle	73	21.3%	128	26.4%	201	24.3%
	Disease prevention	43	12.5%	22	4.5%	65	7.9%
	Cure from disease	25	7.3%	0	0.0%	25	3.0%
	Leisure time	26	7.6%	12	2.5%	38	4.6%
Total		343	100.0%	484	100.0%	827	100.0%

Chi-Square Test

	Value	P value
Pearson Chi Square	72.938	.000
Likelihood Ration	81.439	.000
Linear by linear Association	43.232	.000

4. Where do you prefer exercising: indoors or outdoors?
Crosstab

		Gender of student				Total	
		Female		Male			
		N	%	N	%	N	%
	Indoor	93	27.1%	83	17.1%	176	21.3%

4. Where do you prefer exercising: indoors or outdoors?	Outdoor	107	31.2%	264	54.5%	371	44.9%
	Both indoor and outdoor	143	41.7%	137	28.3%	280	33.9%
Total		343	100.0%	484	100.0%	827	100.0%

Chi-Square Test

	Value	P value
Pearson Chi-Square	44.386	.000
Likelihood Ration	45.119	.000
Linear by linear Association	.438	.508

Discussion

This study observed exercise participation, preferences, and patterns, among 1,500 university students from various departments in Faisalabad, Pakistan. The sample included 705 females and 795 males, aged 18 to 30, and with most participants aged 21-24. Gender distribution was nearly balanced. 55.1% of students engaged in physical activity. Preferred activities were walking, competitive outdoor sports, and running, followed by gym workouts and cycling. Most students exercised 3-4 days per week, with fewer exercising 5-6 days or daily. Preferences for exercise settings varied: outdoor, both indoor and outdoor, and indoor. Students primarily exercised for fitness, muscle building, and weight loss, with additional motivations like disease prevention and leisure. Information about exercise benefits came from relatives, friends, and social media. Many students believed exercise helped maintain good mental health and mood.

This study and Gomez-Lopez's research both identify a lack of time as a key obstacle to student exercise. Gomez-Lopez's study on university students reveals additional barriers like dislike for physical activity, perceived impracticality, laziness, and lack of social support, with gender differences in motivation [12].

Van Niekerk's study on 370 university students revealed key exercise barriers (time constraints, motivation, and lack of support) and motivators (physical health, appearance confidence, and mental well-being), highlighting gender disparities within racial groups and between exercising and non-exercising students. [13].

This study found 51.1% student exercise participation, contrasting with Ebben and Brudzynski's 26.1% survey response rate. Previous research focused on motives or barriers, with varying college student exercise rates (53-68.8%), while our emphasis on patterns, preferences, and barriers revealed insights and motivations for exercising [14].

Male students showed statistically greater moderate to vigorous activity on weekdays than on weekends, with similar results for female students. These findings are consistent with evidence from a study conducted on Spanish university students [15].

The study finds high student participation in physical activity, especially in moderate-intensity exercises and outdoor activities. Male students are more involved in sports compared to females, consistent with prior research [6].

Conclusion

The study provided insight into exercise behaviors and preferences among university students, with most prevalent in the 21-24 age range and a balanced gender representation. While over half participated in regular exercise, a notable proportion remained inactive, suggesting a need for targeted interventions. Walking, outdoor activities, running, and cycling were popular choices, reflecting a preference for accessible options. Many students exercised multiple times a week, particularly outdoors. Motivations for exercise included physical fitness, muscle building, and weight loss. Students accessed information from various sources, indicating broad exposure to health

knowledge. While many students engage in physical activity, addressing barriers for the inactive cohort is essential.

References

1 Chang, S. P., Shih, K. S., Chi, C. P., Chang, C. M., Hwang, K. L., & Chen, Y. H. (2016). Association between exercise participation and quality of sleep and life among university students in Taiwan. *Asia Pacific Journal of Public Health*, *28*(4), 356-367

2 Thompson, D., Karpe, F., Lafontan, M., & Frayn, K. (2012). Physical activity and exercise in the regulation of human adipose tissue physiology. *Physiological reviews*.

3 Mahfouz, M. S., Ali, S. A., Bahari, A. Y., Ajeebi, R. E., Sabei, H. J., Somaily, S. Y., ... & Shook, R. A. N. (2020). Association between sleep quality and physical activity in Saudi Arabian University students. *Nature and Science of Sleep*, 775-782.

4 Dasso, N. A. (2019, January). How is exercise different from physical activity? A concept analysis. In *nursing forum* (Vol. 54, No. 1, pp. 45-52).

5 Grasdalsmoen, M., Eriksen, H. R., Lønning, K. J., & Sivertsen, B. (2020). Physical exercise, mental health problems, and suicide attempts in university students. *BMC psychiatry*, *20*, 1-11.

6 Castro, O., Bennie, J., Vergeer, I., Bosselut, G., & Biddle, S. J. (2020). How sedentary are university students? A systematic review and meta-analysis. *Prevention science*, *21*, 332-343.

7 Lee, E., & Kim, Y. (2019). Effect of university students' sedentary behavior on stress, anxiety, and depression. *Perspectives in psychiatric care*, *55*(2), 164.

8 Kljajević, V., Stanković, M., Đorđević, D., Trkulja-Petković, D., Jovanović, R., Plazibat, K., ... & Sporiš, G. (2021). Physical activity and physical fitness among university students—A systematic review. *International journal of environmental research and public health*, *19*(1), 158.

9 Schultchen, D., Reichenberger, J., Mittl, T., Weh, T. R., Smyth, J. M., Blechert, J., & Pollatos, O. (2019). Bidirectional relationship of stress and affect with physical activity and healthy eating. *British journal of health psychology*, *24*(2), 315-333.

10 Huang, X., Wang, Y., & Zhang, H. (2023). Effects of physical exercise intervention on depressive and anxious moods of college students: A meta-analysis of randomized controlled trials. *Asian Journal of Sport and Exercise Psychology*, *3*(3), 206-221.

11 Diehl, K., Fuchs, A. K., Rathmann, K., & Hilger-Kolb, J. (2018). Students' motivation for sport activity and participation in university sports: A mixed-methods study. *BioMed research international*, *2018*.

12 Luo, W., & He, Y. (2021). Influence of sports applications on college students' exercise behaviors and habits: A thematic analysis. *Alexandria Engineering Journal*, *60*(6), 5095-5104.

13 Gómez-López, M., Gallegos, A. G., & Extremera, A. B. (2010). Perceived barriers by university students in the practice of physical activities. *Journal of sports science & medicine*, *9*(3), 374.

14 Van Niekerk, R. L. (2010). Understanding the barriers to and reasons for physical exercise among university students: psycho-social perspectives of sports. *African Journal for Physical Health Education, Recreation and Dance*, *16*(si-1), 172-181.

15 Ebben, W., & Brudzynski, L. (2008). Motivations and barriers to exercise among college students. *Journal of Exercise Physiology Online*, *11*(5).

16 Clemente, F. M., Nikolaidis, P. T., Martins, F. M. L., & Mendes, R. S. (2016). Physical activity patterns in university students: Do they follow the public health guidelines?. *PloS one*, *11*(3), e0152516.

17 Cerar, K., Kondrič, M., Ochiana, N., & Sindik, J. (2017). Exercise participation motives and engaging in sports activity among University of Ljubljana students. *Open access Macedonian journal of medical sciences*, *5*(6), 794.