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Perceived Barriers to Physical Activity Among University Students: A Qualitative Approach

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ABSTRACT

Background: Regular physical activity is essential for preventing chronic diseases and maintaining musculoskeletal and metabolic health; however, university students frequently develop sedentary habits due to academic demands, prolonged screen time, and limited opportunities for structured exercise.

Objective: To identify and quantify barriers preventing regular exercise among university students.

Methods: A cross sectional study was conducted among 673 university students (362 females and 311 males) from four universities in Faisalabad, Pakistan, selected using simple random sampling. Eligible participants were those who did not engage in regular exercise. Data were collected using a demographic form and a validated, customized Barriers to Exercise Participation questionnaire. Ethical standards were maintained through informed consent and strict confidentiality. Statistical analysis was performed using SPSS version 25, employing descriptive statistics and chi square tests to examine gender based associations.

Results: The most prominent barriers included exhaustion after academic or work related activities (39.8 percent very likely), lack of time (28.2 percent very likely), and insufficient motivation (12.5 percent very likely). Social influences, such as inactive friends and family members (72.7 percent somewhat likely), as well as structural constraints like lack of facilities (39.8 percent very likely) and financial limitations (39.8 percent very likely), also contributed. A significant association between gender and overall perceived barriers was observed ($p = 0.000$).

Conclusion: University students encountered multiple personal, social, and environmental barriers to regular physical activity, with clear gender specific differences. Strengthening institutional support and developing targeted health promotion strategies may improve exercise participation and support long term student wellbeing.

Keywords: Barriers, Exercise Participation, Gender Differences, Physical Activity, University Students.

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Introduction

Regular physical activity is fundamental to maintaining physical, psychological, and social wellbeing, yet more than 81 percent of adolescents worldwide fail to meet recommended activity levels, reflecting a widespread decline that becomes especially pronounced during the transition from late adolescence into university life. Academic pressures, prolonged study hours, scheduling conflicts, low motivation, and unhealthy lifestyle behaviors further reduce opportunities for exercise among university students, who already face a critical period of behavioral formation that shapes long term health trajectories (1). Physical inactivity is now recognized as a key contributor to global morbidity and mortality, and environmental and social factors such as limited access to sidewalks, gyms, and safe recreational spaces disproportionately affect female students whose academic commitments and constrained mobility reduce participation in routine physical activity (2). Gender based disparities in motivation are also evident, as male students generally demonstrate greater enthusiasm for exercise, while female students report more frequent barriers including fatigue, low energy, poor motivation, sedentary routines, mental health limitations, physical concerns, and academic burden (3).

Exercise has long been acknowledged as central to human health, dating back to Hippocrates who described walking as "man's best medicine," a concept that aligns with modern findings demonstrating that consistent physical activity can function as an effective therapeutic modality equal to medication in the management of chronic diseases such as heart failure, diabetes, post stroke disability, and coronary artery disease (4). Participation in sports and active recreation improves cognitive performance, productivity, mental clarity, and academic engagement among university students, while also reducing absenteeism and enhancing overall health outcomes (5). However, access to sport and recreational opportunities remains unequal due to geographic, economic, and disability related constraints, and despite the development of strategies to address these inequities, implementation remains fragmented across sports service systems, limiting their impact on exercise participation (6). Motivational factors that influence students' willingness to be physically active are therefore crucial to recognize, as gender differences and individual preferences demand tailored and context specific strategies to promote sustained engagement in exercise (7).

Leisure education and structured sports programs can positively shape exercise behaviors by helping individuals recognize their abilities, interests, and goals, thereby enhancing cognitive functioning, reducing stress, and improving daily productivity (8). Regular physical activity is particularly beneficial for individuals with chronic health conditions, providing improvements in cardiovascular fitness, psychological wellbeing, cognitive resilience, and reductions in stress and anxiety symptoms (9). Broader social determinants including socioeconomic status, neighborhood walkability, and affordability of healthy food also influence engagement in physical activity, with lower income groups and urban populations facing greater barriers and subsequently lower activity levels (10). Additionally, sedentary lifestyles fueled by increased screen time among university students exacerbate inactivity, as illustrated by findings that Korean students perform markedly less physical activity than their American peers and spend more time engaging in passive leisure activities such as mobile phone use and gaming (11). Physical activity is also closely linked with life satisfaction, sleep quality, and emotional regulation, with evidence demonstrating that university students who engage in regular exercise report higher levels of happiness, better sleep, and lower stress levels (12). Given the rising burden of stress related physical and psychological conditions among students, promoting healthy self-regulated behaviors including exercise and balanced diet is crucial to reducing long term risks of chronic illnesses such as cardiovascular disease, obesity, metabolic disorders, and certain cancers (13).

Despite the well-established benefits of physical activity, literature increasingly highlights that university students face diverse and context specific barriers that limit their participation, yet little research has explored these barriers qualitatively within local university settings. Quantitative studies often overlook personal, social, cultural, and environmental complexities underlying inactivity, creating a gap in understanding the lived experiences of students. Therefore, there is an urgent need to explore these barriers through a qualitative approach to capture nuanced perspectives, inform targeted interventions, and guide the development of evidence based strategies that promote regular exercise among university students.

Materials and Methods

The study was conducted using a structured, systematic approach to ensure methodological rigor and adherence to ethical research standards. A sample size of 673 university students who did not engage in regular physical exercise was calculated using RAOSOFT sample size estimation software, ensuring adequate statistical power for analysis. Participants were recruited from major universities in Faisalabad, including Government College University Faisalabad, University of Agriculture Faisalabad, The University of Faisalabad, and Riphah International University Faisalabad, to obtain a diverse and representative sample across different academic disciplines. Prior to data collection, all participants were informed about the study objectives, procedures, potential risks, and anticipated benefits, after which written informed consent was obtained in accordance with the ethical principles outlined in the Declaration of Helsinki

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(14). Participation was voluntary, anonymity was assured, and confidentiality of all information was maintained throughout the study to encourage honest responses.

Data were collected using a structured questionnaire comprising two sections. The first section included demographic information such as age, gender, academic major, and self-reported reasons for not engaging in regular exercise. The second section employed a customized version of the Barriers to Being Active scale, which consisted of Likert scale based items designed to assess personal, social, environmental, and motivational barriers to exercise among university students. The questionnaire was administered in classroom settings and university common areas, with trained observers present to provide clarification when needed while ensuring that responses remained independent and unbiased. To enrich understanding and validate survey findings, qualitative insights were obtained through brief focus group discussions with selected participants, allowing deeper exploration of perceived barriers. This triangulation enhanced the overall reliability and credibility of the data collected (15).

All quantitative data were coded and entered into the Statistical Package for the Social Sciences (SPSS), version 25.0, for analysis. Descriptive statistics were used to summarize demographic characteristics and overall distribution of barrier scores. Inferential statistical tests, including chi square tests and independent sample t tests, were applied to determine associations and gender based differences in barriers to physical activity. Qualitative data from focus groups were reviewed manually, with recurring ideas categorized into themes supporting the quantitative findings. The integration of both quantitative and qualitative components provided a comprehensive understanding of factors limiting regular exercise among university students (16).

Results

A total of 673 university students participated in the study, and their demographic characteristics are presented in Figure 1. The distribution of barrier frequencies, including exhaustion after work, lack of time, lack of drive, and environmental or financial limitations, is summarized in the descriptive results. The associations between gender and specific barriers to physical activity were examined using chi square tests, with detailed cross tabulations reported in Table 1 for lack of time, Table 2 for exhaustion after work, Table 3 for lack of access to facilities, Table 4 for financial cost, and Table 5 for weekend rest patterns. Each table outlines the proportion of female and male students endorsing these barriers and the statistical significance of the observed differences.

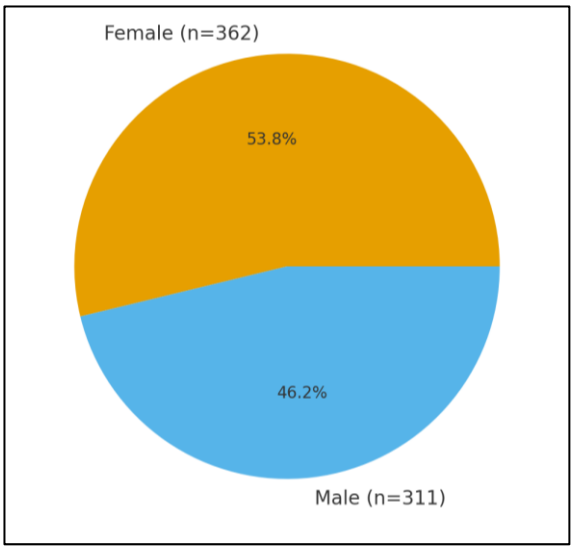

Figure 1: Gender Distribution of Students (n=673)

Table 1: Association of Gender with Lack of Time to Include Exercise (N = 673)

Response Category	Female n (%)	Male n (%)	Total n (%)	p-value
Very likely	117 (32.3)	73 (23.5)	190 (28.2)	
Somewhat likely	43 (11.9)	82 (26.4)	125 (18.6)	
Somewhat unlikely	81 (22.4)	74 (23.8)	155 (23.0)	**0.000**
Very unlikely	121 (33.4)	82 (26.4)	203 (30.2)	
Total	**362 (100)**	**311 (100)**	**673 (100)**	

Table 2: Association of Gender with Exhaustion After Work (N = 673)

Response Category	Female n (%)	Male n (%)	Total n (%)	p-value
Very likely	192 (53.0)	76 (24.4)	268 (39.8)	
Somewhat likely	43 (11.9)	82 (26.4)	125 (18.6)	
Somewhat unlikely	81 (22.4)	74 (23.8)	155 (23.0)	**0.000**
Very unlikely	46 (12.7)	79 (25.4)	125 (18.6)	
Total	**362 (100)**	**311 (100)**	**673 (100)**	

Table 3: Association of Gender with Lack of Access to Facilities (N = 673)

Response Category	Female n (%)	Male n (%)	Total n (%)	p-value
Very likely	192 (53.0)	76 (24.4)	268 (39.8)	
Somewhat likely	43 (11.9)	82 (26.4)	125 (18.6)	
Somewhat unlikely	114 (31.5)	147 (47.3)	261 (38.8)	**0.000**
Very unlikely	13 (3.6)	6 (1.9)	19 (2.8)	
Total	**362 (100)**	**311 (100)**	**673 (100)**	

Table 4: Association of Gender with Cost as a Barrier to Exercise (N = 673)

Response Category	Female n (%)	Male n (%)	Total n (%)	p-value
Very likely	192 (53.0)	76 (24.4)	268 (39.8)	
Somewhat likely	76 (21.0)	155 (49.8)	231 (34.3)	
Somewhat unlikely	81 (22.4)	74 (23.8)	155 (23.0)	**0.000**
Very unlikely	13 (3.6)	6 (1.9)	19 (2.8)	
Total	**362 (100)**	**311 (100)**	**673 (100)**	

Table 5: Association of Gender with Needing Weekend Rest (N = 673)

Response Category	Female n (%)	Male n (%)	Total n (%)	p-value
Very likely	84 (23.2)	0 (0.0)	84 (12.5)	
Somewhat likely	151 (41.7)	158 (50.8)	309 (45.9)	
Somewhat unlikely	114 (31.5)	147 (47.3)	261 (38.8)	**0.000**
Very unlikely	13 (3.6)	6 (1.9)	19 (2.8)	
Total	**362 (100)**	**311 (100)**	**673 (100)**	

Discussion

This study explored the perceived barriers to regular physical activity among 673 university students in Faisalabad, Pakistan, and revealed a wide spectrum of obstacles influencing exercise behavior. The sample included 362 females and 311 males aged 18 to 30 years, with most respondents falling between 21 and 24 years. Although the gender distribution was relatively balanced, females consistently reported higher levels of perceived barriers across multiple domains. The most prominent challenges endorsed by the students included exhaustion after academic or work-related activities, lack of time, insufficient motivation, inactivity in their social circles, limited access to exercise facilities, and financial constraints. These findings highlighted that both personal and structural determinants shaped students' willingness and ability to engage in physical activity.

The prominence of lack of time and exhaustion as major barriers was aligned with existing literature. Similar to the present study, Gomez Lopez et al found that university students frequently cited time constraints, low motivation, impracticality, and a lack of social support as significant obstacles to physical activity, with gender based differences influencing exercise engagement (13). The strong influence of social environments observed in this study, including inactive friends and family members, also mirrored earlier findings that social norms and peer modelling played important roles in shaping health behaviors. Van Niekerk's research further supported these patterns, identifying time limitations, motivational deficits, and insufficient support as key barriers among university students, while also noting motivators such as improved physical health, better appearance, and enhanced mental wellbeing (14). The present findings echoed these results, reinforcing the complex interplay between personal intention and environmental conditions.

Previous studies often reported varying rates of exercise participation among college students, ranging between 53 percent and 68.8 percent, and identified barriers but did not extensively examine gender based patterns or interrelated influences (15). The current study expanded this understanding by characterizing both the frequency and nature of reported obstacles and by demonstrating significant gender differences across almost all barrier categories. Females consistently reported higher levels of exhaustion, lack of access, and financial limitations, which might reflect broader cultural, social, or safety related constraints affecting young women's ability to engage in physical activity. This is consistent with international findings, including research from Portugal, where males engaged in higher levels of moderate and vigorous activity than females, and younger adults were generally more active than university students (16). The observed decline

in activity during weekends among the participants also paralleled the Portuguese findings, suggesting that academic routines may provide structure that inadvertently supports physical activity on weekdays.

Despite contributing valuable insights, the study had limitations. Data were self-reported and therefore subject to recall bias or social desirability bias, and although the sample included multiple universities, all were located within a single city, which may limit generalizability to students from different regions or socioeconomic backgrounds. The cross sectional design also prevented causal inference regarding the relationship between barriers and inactivity. However, the large sample size, inclusion of diverse academic departments, and systematic approach to assessing both personal and environmental obstacles strengthened the reliability of the findings.

The results indicated a need for targeted interventions addressing both gender specific and structural barriers. Universities could promote physical activity by improving access to affordable facilities, incorporating flexible exercise programs, and enhancing social support systems, particularly for female students. Awareness campaigns, peer led initiatives, and structured physical activity sessions integrated into academic environments may also help counteract motivational barriers. Future research should consider longitudinal designs to track changes in activity levels over time, include qualitative exploration to better understand sociocultural influences, and expand sampling across multiple cities to enhance representativeness. Overall, the study underscored the importance of comprehensive strategies that recognize the interconnected personal, social, and environmental factors shaping exercise behavior among university students.

Conclusion

This study identified a range of personal, social, and environmental barriers that prevented university students from engaging in regular physical activity, with lack of time, exhaustion after work, low motivation, inactive social circles, limited facility access, and financial constraints emerging as the most prominent obstacles. Although the sample showed a balanced gender distribution, females consistently reported higher perceived barriers, underscoring the need for gender responsive strategies. These findings emphasized the importance of targeted health promotion initiatives within university settings, including affordable access to facilities, structured activity programs, and social support mechanisms that encourage participation. Strengthening such interventions has meaningful implications for human health, as improving physical activity levels in young adults can reduce long term risks of chronic disease, enhance psychological wellbeing, and foster healthier lifestyle trajectories into adulthood.

Authors' Contributions

ICMJE authorship criteria	Detailed contributions	Authors
Substantial Contributions	Conception or Design of the work	1,2,3
	Data acquisition	3,4
	Data analysis or interpretation	1,3
Drafting or Reviewing	Draft the work	1
	Review critically	1,2
Final approval	Final approval of the version to be published.	3,4
Accountable	Agreement to be accountable for all aspects of the work.	1,2,3,4

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