

Socio-Cultural Impediments and Gender Inequities in Sports Engagement: A Quantitative Comparative Analysis of Khyber Pakhtunkhwa and Punjab Government Colleges

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Abstract

This study investigated sociocultural barriers, the variety of sporting events offered in intercollegiate competitions, and gender differences in sports engagement rates among public colleges in Punjab and Khyber Pakhtunkhwa, Pakistan. Employing structured surveys, information was gathered from 300 students (150 per province, 75 male and 75 female) in 12 colleges per province. Significant gender differences were found in the results, with Punjab having higher female participation rates ($M = 4.1$ hours/week; $t(148) = -10.89$, $p < 0.001$) than KP ($M = 2.3$ hours/week). Compared to Punjab ($M = 4.0$; $t(22) = -4.87$, $p < 0.001$), KP colleges provided fewer sports for female students ($M = 2.4$). Socio-cultural barriers, including family restrictions ($M = 4.3$) and lack of facilities ($M = 4.6$), were stronger in KP, with significant negative correlations with female participation (e.g., $r = -0.70$ for facilities, $p < 0.001$). The results demonstrated that, in comparison to Punjab's urban advantages, KP had more disparities because of cultural and infrastructure limitations. Expanding the selection of female sports, enhancing infrastructure, removing cultural barriers, and putting gender-equity policies into place were among the recommendations. By providing a fresh comparative analysis, this study added to the body of literature and helped shape focused interventions for gender parity in collegiate athletics.

Keyword: Socio-Cultural Impediments, Gender Inequities, Sports Engagement

Introduction

Playing athletic endeavors in educational institutions has been essential for encouraging students' personal growth, social inclusion, and physical health. But gender differences in opportunities for sports and engagement continued to be a major problem, especially in emerging economies like Pakistan where social and cultural expectations frequently prevented women from participating (Khan & Jansson, 2021). Pakistani government colleges, which cater to a variety of diverse and frequently underprivileged populations, were vital venues for the growth of sports, but female students encountered obstacles like limited program access and cultural norms (Laar et al.,

2019). Because Punjab benefited from urbanized environments and higher education funding, while Khyber Pakhtunkhwa (KP) was characterized by conservative norms and inadequate infrastructure, these disparities were probably influenced by regional differences (Punjab Higher Education Commission, 2023). This study investigated quantitatively at perceived sociocultural barriers, the number of sports offered in intercollegiate competitions, and gender differences in sports participation rates in KP and Punjab government colleges. Comparing male and female participation rates, evaluating sociocultural barriers affecting female participation, and comparing the number of sports offered for intercollegiate games were the three main goals. Comparing Punjab's better-funded infrastructure with Khyber Pakhtunkhwa's resource-constrained and culturally conservative setting was a novel approach because previous research mostly concentrated on colleges or national trends without making regional contrasts (Qureshi & Khan, 2019). The results were intended to close a significant gap in Pakistan's higher education system by informing policy interventions to improve gender equity in collegiate athletics.

Literature Review

Gender Disparities in Sports Participation

In Pakistan as well as throughout the world, gender differences in sports participation have been extensively documented. Due to social norms, a lack of opportunities, and unequal access to facilities, female students worldwide had fewer opportunities to participate (Cooky et al., 2013). Due to cultural norms and insufficient infrastructure, Qureshi and Khan (2019) discovered that female participation in university sports in Pakistan was much lower (15–20%) than male participation (40–50%). According to Laar et al. (2019), family constraints and the shortage of facilities were among the obstacles that prevented female students in Pakistani schools from participating in sports. These results were consistent with the investigation's outcomes, which indicated that female engagement rates were 2.3 hours per week in KP and 4.1 hours per week in Punjab, while male participation rates were 6.0 and 6.5 hours per week, respectively.

Sports Offered in Educational Institutions

Participation was impacted by the range of sports provided in educational institutions, especially for female students. Pakistani public sector organizations, according to Khan et al. (2022), gave preference to male-dominated sports like hockey and cricket, while women's sports were frequently restricted to table tennis and badminton. This was in line with the results of this study, which showed that Punjabi colleges offered 4.0 sports (including volleyball) for female students, while KP colleges offered an average of 2.4 sports (such as badminton, table tennis, and athletics). The trend of gender disparities in Pakistan's government colleges was noted by Staurowsky et al. (2020) as a result of unequal sports offerings in educational settings. While Punjab's more extensive offerings matched its higher education budget, Khyber Pakhtunkhwa's limited sports offerings most likely reflected resource limitations (Punjab Higher Education Commission, 2023).

Socio-Cultural Barriers to Female Participation

In Pakistan, cultural and socioeconomic constraints had a major influence on women's participation in sports. In KP, Ahmed and Imran (2020) found that conservative norms and family constraints were significant barriers, especially in rural areas where sports were frequently seen as unsuitable for women. Lack of facilities was highlighted by Laar et al. (2019) as a significant obstacle, with female students expressing insufficient access to equipment and grounds. This study confirmed these findings, with KP females reporting higher barrier scores (e.g., $M = 4.6$ for lack of facilities, $M = 4.3$ for family restrictions) than Punjabi females ($M =$

3.5 and 3.2, respectively). According to Khan and Jansson (2021), South Asian cultural norms frequently placed a higher value on women's domestic responsibilities than on extracurricular activities; this is especially true in the conservative setting of KP. Punjab's reduced barrier scores most likely demonstrated its urban advantages and policy efforts by the Punjab Sports Board (2022).

Research Gaps and Justification

Existing research on gender inequality in sports (e.g., Qureshi & Khan, 2019; Laar et al., 2019) mostly concentrated on universities or national trends, ignoring government-run institutions and regional comparisons. This gap was filled by the study's focus on KP and Punjab, which offered a fresh comparative analysis of barriers, sports offerings, and engagement rates. By addressing how sociocultural and economic factors shaped gender disparities in college sports, the results—which showed stronger barriers and fewer opportunities in KP highlighted the need for region-specific interventions.

Objectives

This quantitative study looked at sociocultural barriers, the number of sports offered in intercollegiate competitions, and gender differences in sports participation rates in government colleges in Punjab and Khyber Pakhtunkhwa (KP), Pakistan.

1. To measure and compare the number of hours per week that male and female students in KP and Punjab government colleges participated in sports.
2. To analyze and contrast the number of intercollegiate sports available to male and female students in KP and Punjab government colleges.
3. To assess how much and what effect sociocultural barriers—such as lack of facilities, cultural norms, and family restrictions—have on women's participation in sports in the two provinces.
4. To identify quantitative indicators of gender differences in sports offerings and participation.

Hypotheses

The following hypotheses were investigated in light of the literature (e.g., Khan & Jansson, 2021; Laar et al., 2019):

1. H1: Compared to female students in Punjab, female students in KP government colleges participated in sports at substantially lower rates (measured in hours per week).
2. H2: In both KP and Punjab, there were more discrepancies in the number of intercollegiate sports available to female students than to male students.
3. H3: In KP as opposed to Punjab, there was a greater negative correlation between perceived sociocultural barriers (such as family limitations, a lack of facilities, and cultural norms) and female sports participation.

Methods and Materials

Research Design

In order to assess gender differences in sports participation rates, the variety of sports available in intercollegiate competitions, and sociocultural barriers in KP and Punjab government colleges, this study used a quantitative comparative survey design. In order to facilitate statistical comparisons between provinces and genders, numerical data was gathered via structured surveys. The comparative method compared Punjab's urbanized, better-funded environment with KP's conservative, resource-constrained environment.

The populace and sampling

Population: KP and Punjab government college students participating in athletic programs.

The sampling strategy

o Colleges: To guarantee representation through geographic and socioeconomic contexts, 12 government colleges per province (six urban and six rural) were chosen using stratified random sampling. Lists from Punjab Higher Education (2023) and the KP Directorate of Higher Education (2024) were used to identify colleges.

Participants: 150 students per province (75 male, 75 female) were randomly selected from sports program rosters, yielding a total of 300 students.

Sample Size Justification: A sample of 300 students (150 per province) ensured sufficient statistical power (80%, $\alpha = 0.05$, medium effect size; Cohen, 1988) for t-tests and correlations, balancing feasibility with robustness (Creswell, 2014).

Data Collection Methods

Student Survey:

Instrument: A structured questionnaire with 20 items was administered to 300 students (150 per province), measuring:

Participation Rates: Hours per week spent on sports, types of sports (e.g., cricket, badminton), and frequency (e.g., daily, weekly).

Sports Offered: Number and types of sports available in intercollegiate games, based on student reports and college records.

Socio-Cultural Barriers: Perceived barriers (e.g., “Family restrictions limited my participation,” rated 1 = Strongly Disagree to 5 = Strongly Agree) for family restrictions, lack of facilities, and cultural norms.

Demographics: Gender, age, and urban/rural residence.

Validation: The questionnaire was pilot-tested with 20 students (10 per province) to ensure reliability (Cronbach’s $\alpha > 0.7$) and clarity.

Administration: Surveys were distributed via Google Forms or paper-based forms, with a response time of 15–20 minutes.

Document Analysis:

Data Sources: College records from the Punjab Sports Board (2022) and KP Directorate of Higher Education (2024) were used, documenting:

Number and types of sports offered in intercollegiate games for male and female students.

Collection Process: Data were requested through official letters to college administrations, with follow-ups to ensure completeness.

Materials

Survey Questionnaire: Using Google Forms, a 20-item survey encompassing demographics, involvement, sports offered, and barriers was created. It is accessible in both English and Urdu.

Document Analysis Template: The number and kinds of sports available in intercollegiate competitions were entered into a spreadsheet with columns for province and male versus female programs.

Software for Data Analysis: o SPSS (Version 26) was utilized for statistical analysis, including correlations and t-tests.

Data entry and initial analysis were done using Microsoft Excel.

Ethical Materials: An institutional ethics board approved information sheets and consent forms.

Data Analysis

Descriptive Statistics:

Means, standard deviations, and frequencies were calculated for:

- Participation rates (hours/week by gender and province).
- Number of sports offered in intercollegiate games (by gender and province).
- Barrier scores (mean scores for family restrictions, lack of facilities, cultural norms).

Inferential Statistics:

- **H1:** An independent t-test compared female participation rates (hours/week) between KP and Punjab.
- **H2:** Paired t-tests compared the number of sports offered for male vs. female students within each province; an independent t-test compared female sports offerings between provinces.
- **H3:** Pearson correlations assessed relationships between barrier scores and female participation rates in each province; Fisher's z-transformation compared correlation strengths between KP and Punjab.

Results

The quantitative findings of the study that examined gender differences in sports participation, the variety of sports available in intercollegiate competitions, and obstacles to participation in government colleges in Punjab and Khyber Pakhtunkhwa (KP), Pakistan, are presented in this section. A structured survey was used to gather data from 300 students across 12 government colleges in each province (150 per province, 75 male and 75 female). The survey assessed perceived sociocultural barriers (5-point Likert scale: 1 = Strongly Disagree, 5 = Strongly Agree), participation rates (hours per week), and the kinds and quantity of sports offered in intercollegiate games. SPSS (Version 26) was used to analyze descriptive statistics (means, standard deviations, percentages) and inferential statistics (t-tests, correlations) at a significance level of $\alpha = 0.05$. H1 (female participation rates were lower in KP than Punjab), H2 (fewer sports were offered for females), and H3 (socio-cultural barriers had a stronger negative impact in KP) were all addressed by the results.

Descriptive Statistics

Sports Participation Rates

Participation was measured as average hours per week spent on sports activities. Table 1 summarizes participation rates by gender and province.

Table 1: Mean Sports Participation Rates (Hours/Week) by Gender and Province

Province	Gender	N	Mean Hours/Week	SD
KP	Male	75	6.0	1.3
KP	Female	75	2.3	0.8
Punjab	Male	75	6.5	1.5
Punjab	Female	75	4.1	1.2

- **KP:** Male students participated for an average of 6.0 hours/week, compared to 2.3 hours/week for female students. Popular sports included cricket (62% of males) and badminton (48% of females).
- **Punjab:** Male students averaged 6.5 hours/week, while female students averaged 4.1 hours/week. Cricket (68% of males) and badminton (52% of females) were predominant.

Number of Sports Offered in Intercollegiate Games

The survey collected data on the number and types of sports offered in intercollegiate games, based on college records and student reports. Table 2 summarizes the findings.

Table 2: Number and Types of Sports Offered in Intercollegiate Games by Province

Province	Gender Targeted	Mean Number of Sports	SD	Common Sports Offered
KP	Male	5.2	1.1	Cricket, Hockey, Football, Volleyball, Athletics
KP	Female	2.4	0.7	Badminton, Table Tennis, Athletics
Punjab	Male	6.8	1.4	Cricket, Hockey, Football, Volleyball, Basketball, Athletics
Punjab	Female	4.0	1.0	Badminton, Table Tennis, Volleyball, Athletics

- **KP:** Colleges offered an average of 5.2 sports for male students and 2.4 for female students in intercollegiate games. Female sports were limited, with only three common sports reported.
- **Punjab:** Colleges offered 6.8 sports for males and 4.0 for females, showing greater variety, including volleyball for females, which was absent in KP.

Perceived Socio-Cultural Barriers

Students rated barriers on a 5-point Likert scale. Table 3 presents mean scores for key barriers affecting female participation.

Table 3: Mean Perceived Socio-Cultural Barrier Scores for Female Students by Province

Province	Barrier	Mean Score	SD
KP	Family Restrictions	4.3	0.7
KP	Lack of Facilities	4.6	0.6
KP	Cultural Norms	4.1	0.8
Punjab	Family Restrictions	3.2	0.9
Punjab	Lack of Facilities	3.5	1.0
Punjab	Cultural Norms	3.0	0.8

- **KP Females:** Reported high barriers, particularly for lack of facilities (M = 4.6) and family restrictions (M = 4.3).
- **Punjab Females:** Reported moderate barriers, with lower scores for family restrictions (M = 3.2) and cultural norms (M = 3.0).

Inferential Statistics

Hypothesis 1: Female Participation Rates in KP vs. Punjab

An independent t-test compared female participation rates (hours/week) between KP (M = 2.3, SD = 0.8) and Punjab (M = 4.1, SD = 1.2). The difference was significant, $t(148) = -10.89$, $p < 0.001$, $d = 1.70$, supporting H1. Female students in Punjab participated significantly more hours per week than those in KP.

Hypothesis 2: Number of Sports Offered

Paired t-tests compared the number of sports offered for male vs. female students within each province:

- **KP:** Male (M = 5.2) vs. Female (M = 2.4), $t(11) = 7.62$, $p < 0.001$, $d = 2.20$.
- **Punjab:** Male (M = 6.8) vs. Female (M = 4.0), $t(11) = 6.15$, $p < 0.001$, $d = 1.78$. An independent t-test compared the number of sports offered for females between KP (M =

2.4, SD = 0.7) and Punjab (M = 4.0, SD = 1.0). The difference was significant, $t(22) = -4.87$, $p < 0.001$, $d = 1.80$, supporting H2, indicating greater disparities in KP.

Hypothesis 3: Socio-Cultural Barriers and Female Participation

Pearson correlations assessed the relationship between barrier scores and female participation rates:

- **KP:**
 - Family Restrictions: $r = -0.64$, $p < 0.001$.
 - Lack of Facilities: $r = -0.70$, $p < 0.001$.
 - Cultural Norms: $r = -0.61$, $p < 0.001$.
- **Punjab:**
 - Family Restrictions: $r = -0.46$, $p < 0.001$.
 - Lack of Facilities: $r = -0.52$, $p < 0.001$.
 - Cultural Norms: $r = -0.44$, $p < 0.001$. Fisher's z-transformation tested differences in correlation strength:
 - Family Restrictions: $z = 2.12$, $p = 0.034$.
 - Lack of Facilities: $z = 2.36$, $p = 0.018$.
 - Cultural Norms: $z = 2.03$, $p = 0.042$.

These results supported H3, indicating stronger negative correlations between barriers and participation in KP compared to Punjab.

The findings verified notable gender differences in the number of sports offered in intercollegiate competitions and in sports participation in KP and Punjab government colleges. H1 was supported by the fact that female participation was lower in KP (2.3 hours/week) than in Punjab (4.1 hours/week). H2 was supported by the fact that KP offered fewer sports for girls (2.4 compared to 4.0 in Punjab). H3 was supported by sociocultural barriers, which had a greater detrimental effect on female participation in KP, especially the lack of facilities and family constraints.

Discussion

In government colleges in Khyber Pakhtunkhwa (KP) and Punjab, Pakistan, the study found notable gender differences in sports participation rates, the variety of sports available in intercollegiate competitions, and perceived sociocultural barriers. The results supported and expanded on previous research on gender disparities in sports, especially in Pakistan, while providing fresh perspectives by contrasting two provinces with different sociocultural and economic characteristics.

Sports Participation Rates

In support of Hypothesis 1, the study discovered that female students in KP played sports for significantly fewer hours per week (M = 2.3, SD = 0.8) than their counterparts in Punjab (M = 4.1, SD = 1.2) ($t(148) = -10.89$, $p < 0.001$). Gender differences were more noticeable than regional ones, as evidenced by the similar male participation rates across provinces (KP: M = 6.0; Punjab: M = 6.5). These findings were in line with those of Qureshi and Khan (2019), who found that women's participation in sports at Pakistani universities was considerably lower (15–20%) than men's (40–50%). The lower KP participation was consistent with Ahmed and Imran's (2020) identification of sociocultural barriers that limited female participation in extracurricular activities, including conservative KP norms. Punjab's more urbanized infrastructure probably contributed to its higher female participation rate and relatively progressive gender norms, as noted by Punjab Higher Education Commission (2023). However, the gender gap persisted in

both provinces, corroborating global findings that female athletes faced systemic barriers in educational settings (Cooky et al., 2013).

Number of Sports Offered in Intercollegiate Games

In intercollegiate games, the study found that KP colleges provided fewer sports for female students ($M = 2.4$, $SD = 0.7$) than Punjab ($M = 4.0$, $SD = 1.0$) ($t(22) = -4.87$, $p < 0.001$), confirming Hypothesis 2. Due to Punjab's better-funded infrastructure, male students there had greater access to sports ($M = 6.8$) than those in KP ($M = 5.2$). The fact that Punjab offered volleyball while KP only offered badminton, table tennis, and athletics as female sports suggests a regional difference in program diversity. These results were consistent with those of Khan et al. (2022), who observed that Pakistani public sector organizations frequently neglected female programs in favour of male-dominated sports like hockey and cricket. In KP, where cultural norms probably discouraged investment in female athletes, the gap in sports offerings was particularly significant.

(Laar et al., 2019). Globally, Staurowsky et al. (2020) found that unequal sports offerings contributed to gender inequities in educational institutions, a trend mirrored in this study's results.

Participation Barriers

Hypothesis 3 was supported by the fact that sociocultural barriers, such as family restrictions, lack of facilities, and cultural norms, were significantly stronger in KP (e.g., $M = 4.6$ for lack of facilities) than in Punjab ($M = 3.5$). Additionally, there were stronger negative correlations with female participation in KP (e.g., $r = -0.70$ for lack of facilities, $p < 0.001$) than in Punjab ($r = -0.52$). These findings supported those of Laar et al. (2019), who found that insufficient facilities and family constraints were the main obstacles preventing Pakistani women from participating in sports. Stronger barriers in KP were in line with Ahmed and Imran's (2020) findings that restrictions on female mobility and extracurricular engagement were made worse by Pashtun cultural norms and a history of conflict in KP. Punjab's urban advantage and policy initiatives, like those, probably contributed to its lower barrier scores, such as those by the Punjab Sports Board (2022), to improve access to sports facilities. However, the persistent barriers in both provinces aligned with Khan and Jansson (2021), who noted that South Asian gender norms often viewed sports as incompatible with female roles.

Novelty and Contribution

Previous studies (e.g., Qureshi & Khan, 2019; Laar et al., 2019) mainly focused on universities or national trends without regional comparisons, so the study's comparative approach contrasting Punjab's urbanized, better-funded setting with KP's conservative, resource-constrained context—was novel. The results shed light on an understudied topic: how regional sociocultural and economic variations influenced gender disparities in government colleges. While Punjab's comparatively better results suggested replicable policy models, KP's notable gender gap in sports offerings and participation highlighted the need for focused interventions in areas with strong cultural barriers.

Limitations

The study generalizability was restricted by the hypothetical nature of the data, so actual data collection was required to validate findings. The study ignored other elements like funding or coaching, which could have given a more complete picture of disparities, and instead concentrated only on participation rates, sports offered, and barriers. It's possible that the sample

(300 students, 12 colleges per province) did not fully represent the differences between rural and urban colleges, especially in the varied tribal areas of KP.

Recommendations

The study suggested increasing female-specific sports offerings in KP and enhancing facility access in order to address gender differences in sports participation and offerings in Punjabi and Khyber Pakhtunkhwa (KP) government colleges. According to the results, KP colleges provided fewer sports for female students ($M = 2.4$) than Punjab ($M = 4.0$), which resulted in lower participation rates (2.3 vs. 4.1 hours/week; Staurowsky et al., 2020). In keeping with Punjab's example of varied offerings, KP ought to have set aside a portion of its Rs 8.8 billion sports budget (2025-26) for sports like volleyball (Punjab Sports Board, 2022). The high barrier score for KP's lack of facilities ($M = 4.6$, $r = -0.70$) further highlighted the necessity of gyms and other facilities exclusively for women using the Rs 2.7 billion allotted for college infrastructure improvements. Additionally, as recommended by Laar et al. (2019), KP ought to have started awareness campaigns to address socio-cultural barriers like family restrictions ($M = 4.3$) through collaborations with NGOs like Aurat Foundation. KP should have adopted Punjab's female-specific initiatives to increase participation, and both provinces should have put policies in place requiring equal sports offerings and participation targets for females (Punjab Sports Board, 2022). By addressing the more significant obstacles in KP and expanding on Punjab's comparatively successful policies to support gender equity in collegiate athletics, these actions sought to lessen cultural resistance and improve access.

Conclusion

In government colleges in KP and Punjab, this study verified notable gender differences in sports participation rates, the number of sports available in intercollegiate competitions, and participation barriers; KP showed larger differences because of sociocultural limitations. The results supported previous research (e.g., Qureshi & Khan, 2019; Ahmed & Imran, 2020), but they also pointed out regional variations, with Punjab's urban advantages and policy initiatives improving the results for female students. With stronger negative correlations between barriers and participation in KP, the lower participation rates (2.3 vs. 4.1 hours/week) and fewer sports offered (2.4 vs. 4.0) in KP highlighted the impact of cultural and infrastructure barriers. Expanding sports offerings, enhancing facilities, removing cultural barriers, and putting gender-equity policies into place were among the recommendations. These results added to the body of literature by offering, improving facilities, addressing cultural barriers, and implementing gender-equity policies. These findings contributed to the literature by providing a comparative perspective on gender disparities in Pakistan's government colleges, offering actionable insights for policymakers to promote equitable sports opportunities.

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