

School Track and Inequalities in Sports Rehabilitation among Chinese High School Students

Erjiu Zhang

*Beijing No.4 High School, Beijing, China
zhang_jianzi@hotmail.com*

Abstract. Sports injuries pose significant risks to adolescents' health and development, and socioeconomic status (SES) plays a crucial role in shaping access to rehabilitation. While Western studies often use public versus private schooling as a proxy for SES, this distinction is less meaningful in China, where stratification is better captured by academic track. This study compares students on the national college entrance examination (Gaokao) track with those on the international college application track to assess differences in sports rehabilitation awareness and practices. Survey data from 95 high school students show that international-track students report higher acceptable medical costs and greater importance attached to protective expenditures, such as sports insurance and gear. In contrast, no significant track-based differences emerge in attitudes toward professional rehabilitation services. These findings suggest that financial inequalities underpin disparities in rehabilitation, while health awareness diffuses more evenly, pointing to both challenges and opportunities for more equitable policy design in Chinese schools.

Keywords: Sports injuries, sports rehabilitation, adolescents, Chinese high schools, education inequality

1. Introduction

Sports injuries have become an increasingly visible issue in the growth and development of high school students [1]. Under the dual pressures of preparing for competitive sports and meeting academic demands, many students enter a cycle of “overtraining–injury–neglect–deterioration” in the absence of scientific training guidance and adequate recovery mechanisms [2]. Such injuries not only endanger students' physical health but also affect their psychological well-being, self-identity, and, ultimately, their educational and career trajectories.

In the Chinese high school context, the occurrence and management of sports injuries are not only medical matters but also deeply shaped by structural factors related to social class and socioeconomic status (SES). Importantly, SES differences among students are often reflected in the type of school they attend and the academic track they follow [3, 4]. For instance, students in international schools or international departments of public schools—who tend to come from more affluent families—are more likely to have access to professional rehabilitation services, psychological counseling, and comprehensive medical insurance. By contrast, students in regular public high schools, especially those preparing for the national college entrance examination

(Gaokao), often face limited institutional resources, weaker health support systems, and less awareness of rehabilitation practices. At the family level, middle- and upper-class households can supplement school-based support with private medical care, specialized training, and broader social networks, while families with fewer resources may delay or forgo treatment due to financial constraints or lack of information. These disparities contribute to the reproduction of educational and social inequalities through unequal access to recovery and rehabilitation.

At the policy level, gaps in the current health insurance system and the limited role of social organizations in youth sports rehabilitation leave students without systematic protection, particularly when injuries occur in extracurricular or informal sports settings. The lack of tailored mechanisms for addressing student sports injuries further amplifies inequalities that are structured by school type, track, and family background.

Against this backdrop, this study takes Chinese high school sports injuries as an entry point to examine how differences in school type and academic track—proxies for broader social class distinctions—shape students' awareness, practices, and access to sports rehabilitation. From a sociological and educational perspective, the study aims to highlight these inequalities and to propose more inclusive and equitable policy measures that both promote the healthy development of school sports and safeguard students' rights to health and personal development.

2. Literature review

Adolescence is a formative period for physical and mental development, and sports participation is widely recognized as beneficial to health and well-being [1, 2]. At the same time, sports participation inevitably raises the risk of injury, making rehabilitation crucial for recovery and prevention of long-term negative outcomes. A substantial body of research in Western contexts, particularly in the United States, shows that adolescents' access to and engagement in sports rehabilitation are strongly stratified by socioeconomic status (SES) [5].

In these contexts, SES differences are often operationalized through proxies such as family income, parental education, neighborhood characteristics, or school type (e.g., public vs. private schools) [6]. For example, students attending private schools—which generally enroll youth from higher-SES families—are more likely to have access to certified athletic trainers, advanced rehabilitation facilities, and specialized recovery programs. In contrast, public schools, particularly those in low-income districts, often lack dedicated rehabilitation resources, leaving injured students to rely on overburdened school nurses or external medical care that may be financially inaccessible [7]. Research also finds that families with higher SES can supplement school resources with private medical services, sports science programs, and insurance coverage, while lower-SES families often delay treatment or depend on informal, less effective recovery methods. These patterns contribute to persistent inequalities in recovery outcomes and reinforce broader social disparities in education and health [8].

However, the Chinese high school system operates differently, and the conventional public versus private distinction is not the most useful proxy for understanding SES differences in sports injury recovery. Many elite public schools, especially in urban centers, are highly resourced and selective [3, 9], while some private schools primarily serve students who cannot succeed in the highly competitive public system. Instead, the most meaningful stratification in the Chinese context lies in the academic track students pursue. On the one hand, students preparing for the national college entrance examination (Gaokao) often attend regular public high schools where institutional priorities are heavily tilted toward academic performance, sometimes at the expense of health services and physical well-being. On the other hand, students on the international college application track—

whether enrolled in international departments within public schools or in stand-alone international high schools—tend to come from more affluent families. These students are more likely to access professional rehabilitation services, benefit from a stronger health-support infrastructure within their schools, and draw on family resources to secure private care when injured.

Framing SES differences in terms of school track rather than school ownership (public vs. private) thus provides a more accurate way to capture how social class manifests in Chinese high schools. The international track has become a marker of middle- and upper-class status, reflecting both the financial ability to pay higher tuition fees and the cultural capital needed to pursue overseas education. Conversely, the Gaokao track remains the default route for the majority of students, particularly those from working- and lower-middle-class backgrounds, who face both financial constraints and limited institutional support for sports rehabilitation.

By treating academic track as a key indicator of class and resource inequality, this study extends the literature by demonstrating that disparities in rehabilitation support among Chinese high school students are shaped not only by family background but also by the stratified organization of the school system. Specifically, the analysis focuses on two dimensions: (1) students' acceptable and perceived importance of financial expenditures on medical and protective measures, and (2) their awareness of, or perceived importance placed on, professional rehabilitation services. This study hypothesizes that track-based differences will be most pronounced in the financial domain, reflecting underlying SES disparities, whereas differences in attitudes toward professional rehabilitation will be smaller or negligible. This is because awareness of rehabilitation services is more widely and evenly disseminated in contemporary Chinese society—through channels such as the Internet—reducing its dependence on socioeconomic background.

3. Data and methods

This study explores sports rehabilitation among Chinese high school students with the goal of determining whether awareness and practices related to injury recovery vary across different school tracks. Specifically, this study hypothesizes that students following the national exam track would show distinct levels of awareness and engagement in sports rehabilitation compared to those pursuing the international college application track.

3.1. Instrument: survey design and measures

Data were gathered through a self-developed questionnaire structured into three parts. The first part captured demographic details and basic information on sports participation, including age, school type, frequency of participation, primary sports settings, and prior use of paid sports services. The second part focused on respondents' experiences with sports injuries, covering injury types as well as recovery and rehabilitation actions. The final part assessed awareness and acceptable financial expenditures related to sports rehabilitation through a series of scales. For example, awareness of protective mechanisms (such as sports insurance, protective gear, or supplements) was measured using a 5-point Likert scale, with response options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.2. Sampling

The target population for this study was high school students in China. A convenience sampling strategy was used to recruit participants for this study. Participants were recruited from July to

September 2025 via social media posts and group chats. After removing incomplete responses, the final sample for analysis consisted of 95 participants.

3.3. Data analysis

The data collected from the survey were analyzed using Stata. The analysis involved two stages. First, descriptive statistics (including frequencies, percentages, means, and standard deviations) were calculated to summarize the sample characteristics and key variables. Second, correlations between school type and awareness of sports rehabilitation were analyzed, and an independent samples t-test was conducted to determine if there was a statistically significant difference between students on the national exam track and those on the international college application track.

4. Findings

This section presents the results of the data analysis, beginning with a description of the sample's characteristics, followed by the results of the inferential analysis used to test the research hypotheses.

4.1. Descriptive statistics

The final sample (N = 95) includes 45 respondents who identify as male and 50 who identify as female. Within the sample, 20 students attend a public high school on the national exam track, 5 attend a private high school on the same track, 35 are enrolled in the international department of a public high school, and 35 attend an international high school. For the purposes of analysis, the first two groups are combined to represent students on the national exam track (n = 25), while the latter two groups are combined to represent students on the international college application track (n = 70).

Within the sample, 36.8% of students exercise more than four times per week, while 13.7% exercise less than once per week. Nearly half of the students fall between these two extremes (see Figure 1). The most common exercise setting is physical education (PE) class, followed by participation in sports clubs (e.g., football or basketball) and spontaneous workouts on the playground or in dormitories (Figure 2). In total, 28.4% of students report experiencing an exercise-related injury within the past two years. Among these students, the majority indicate that their first response is to visit the school clinic (51.9%), while 22.2% seek treatment directly at a hospital (Figure 3).

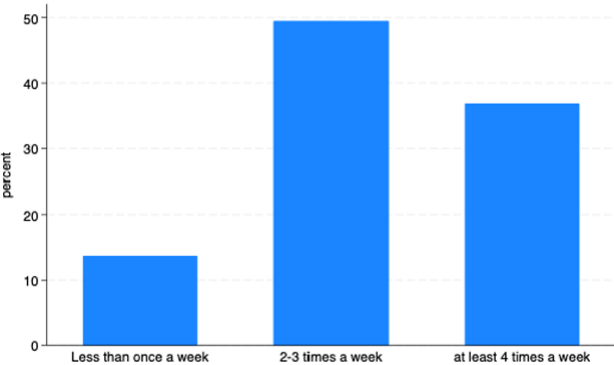


Figure 1. Distribution of workout frequencies among respondents

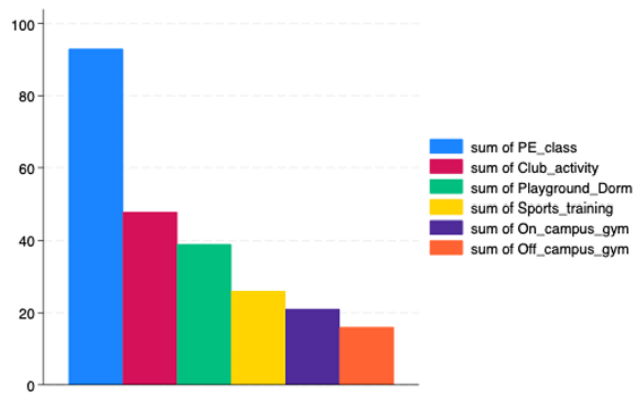


Figure 2. Primary exercise settings among respondents

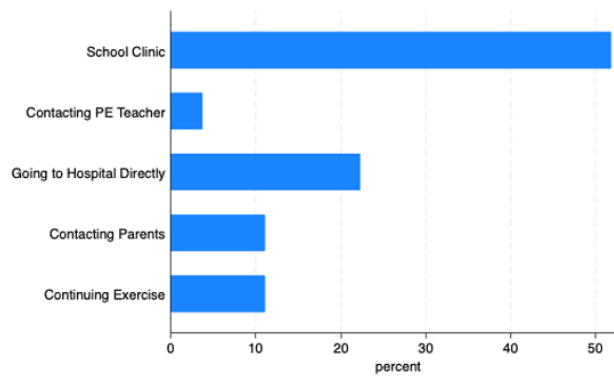


Figure 3. First response after injury among respondents

4.2. Comparison between students from different types of schools

This study examines differences between students on the international college application track and those on the national exam track across three dimensions: acceptable medical costs, perceived importance of spending on protective measures, and perceived importance of professional rehabilitation.

First, students in public high schools preparing for the national examinations report lower acceptable medical costs compared with their peers on the international college application track. On a 1–5 scale, students on the national exam track report a mean of 2.28, which aligns with the lower bound of the “501–1000 yuan” category, whereas students on the international track report a mean of 2.91, closer to the upper bound of the same category (Figure 4). A two-way T-test is conducted, and the difference is statistically significant at the 95% confidence level ($p = 0.0082$).

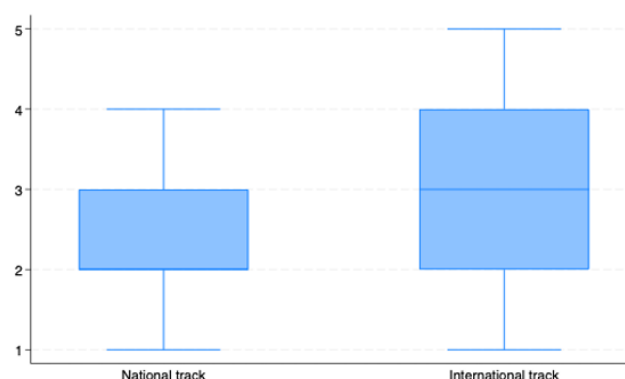


Figure 4. Acceptable medical cost between the two groups

Second, students on the international college application track place greater importance on expenditures for protective measures, including both sports insurance and protective sports gear. Their average rating of the importance of sports insurance is 3.90 on a 1–5 scale, compared to 3.28 among students on the national exam track. Similarly, their average rating for protective sports gear is 4.16, compared to 3.68 among national exam track students (see Figure 5 for a combined measure of the two items). Both differences are statistically significant at the 95% confidence level ($p = 0.01$ and $p = 0.03$, respectively).

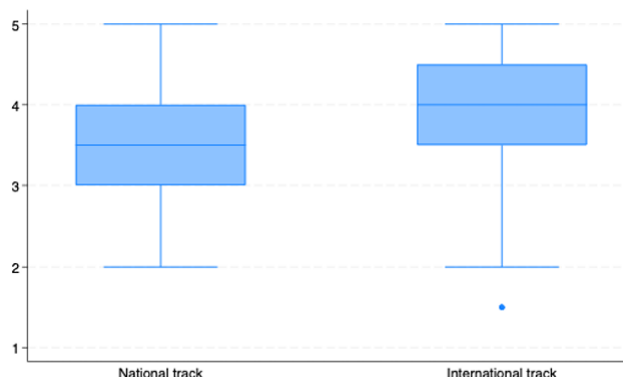


Figure 5. Perceived importance of sports insurances between the two groups

Finally, the two groups of students do not differ significantly in their perceived importance of professional rehabilitation. Students are asked both the extent to which they would end rehabilitation early to prioritize academic work and the extent to which they prefer professional rehabilitation over resting. The differences in mean values between the groups are minimal and not statistically significant.

5. Conclusion and discussion

This study set out to examine how differences in school track, as a proxy for socioeconomic status, shape Chinese high school students' awareness, practices, and financial attitudes toward sports rehabilitation. By comparing students on the national exam track with those on the international college application track, the study highlights both the persistence and the limits of class-based disparities in the governance of sports injuries.

The findings confirm that track-based inequalities manifest most strongly when financial expenditure is involved. Students on the international track report higher levels of acceptable medical cost and place greater importance on protective expenditures such as sports insurance and protective gear. These differences are statistically significant and reflect the underlying socioeconomic contrasts between families who can afford international education and those preparing for the Gaokao. In other words, financial capacity underpins access to, and prioritization of, protective and medical resources in ways that reinforce broader inequalities in health and education.

By contrast, the two groups of students do not differ significantly in their perceived importance of professional rehabilitation services. Despite disparities in financial resources, both groups appear to share similar levels of awareness about the value of formal rehabilitation. This suggests that information and norms around professional rehabilitation may diffuse more evenly across class lines, likely through the Internet, media, and peer networks, where access to health-related knowledge is less dependent on economic background. This finding points to the importance of distinguishing between material and informational resources: while financial resources remain stratified, informational resources may circulate more democratically in contemporary Chinese society.

These results contribute to the literature in several ways. First, they demonstrate that in the Chinese context, school track provides a more accurate proxy for socioeconomic inequality than the conventional public/private distinction often used in Western studies. Second, they show that class-based inequalities in rehabilitation are not uniform: they are most pronounced in financial domains but less so in informational and attitudinal domains. Finally, the findings highlight how structural inequalities in the Chinese high school system are embedded not only in family background but also in institutional pathways that shape students' educational futures and access to health resources.

From a policy perspective, the results underscore the need to strengthen rehabilitation support for all students overall [10], but also particularly for students in public high schools serving Gaokao-track students. Expanding affordable insurance coverage, providing basic protective gear, and ensuring access to professional rehabilitation services would help reduce inequalities in injury recovery. At the same time, leveraging digital platforms and school-based education to further disseminate health knowledge can build on existing egalitarian trends in awareness. A more inclusive and equitable approach to school sports rehabilitation would not only safeguard students' rights to health but also mitigate the reproduction of educational and social inequality through differential access to recovery and protection.

In conclusion, sports injuries among Chinese high school students are not merely a medical concern but also a reflection of stratified educational and social structures. By focusing on track differences as a marker of class, this study shows how inequalities in health resources intersect with the organization of secondary education. Future research could expand on these findings by exploring longitudinal outcomes of sports injuries across tracks, incorporating larger and more representative samples, and comparing the Chinese case with other national contexts where different institutional structures shape the intersection of class, schooling, and health.

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