

# Sport-Studies Programs in Morocco: Impact on the Psychosocial Development of Student-Athletes

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## Abstract

This study assesses the impact of sport-studies programs on the psychosocial development of Moroccan student-athletes by comparing a group enrolled in such programs with a control group of non-enrolled student-athletes. A mixed-methods approach was adopted, combining standardized quantitative tools (SDQ, PSS, and Rosenberg's Self-Esteem Scale) with semi-structured qualitative interviews. The findings reveal a significant improvement in self-esteem, better stress management, and more positive socio-emotional indicators among enrolled student-athletes. These benefits are reinforced by the quality of supervision, the balance between academic and athletic demands, and structured social support. While the study highlights the positive outcomes of sport-studies programs in Morocco, it also identifies areas for improvement, particularly in psychological follow-up and academic support.

**Keywords:** Sport-Studies, Psychosocial Development, Student-Athletes, Dual Career, Morocco

## Introduction

In Morocco, the implementation of sport-studies programs aims to reconcile the demands of academic education with the development of sporting talent. However, the debate on their actual effectiveness, particularly in terms of psychosocial outcomes, remains poorly documented scientifically. While several countries have demonstrated the benefits of dual careers in athletes' overall development (Guidotti et al., 2021; Storm & Henriksen, 2020), Moroccan data remain scarce.

This lack of solid evidence makes it necessary to conduct a rigorous study on the effects of these programs on the psychosocial development of young Moroccan athletes. This research focuses specifically on three essential dimensions: self-esteem, stress management, and social adaptation of student-athletes. By comparing a sample of students enrolled in a sport-studies program with a control group of non-enrolled peers, we aim to evaluate the concrete outcomes of this initiative within the Moroccan educational and sporting context.

The main objective is to determine whether student-athletes benefit from measurable psychosocial advantages and to identify the key factors contributing to this impact. This study thus seeks to fill a gap in national literature and provide useful insights to policymakers, educators, and sports academy managers for adjusting public policies and support systems. In Morocco, sport-studies programs have been initiated since the early 2000s through a joint policy of the Ministry of National Education and the Ministry of Youth and Sports. These programs aim to combine academic training with intensive sports preparation, particularly for young talents identified by federations. The report from the study day of March 2, 2017 (Ministry of Youth and Sports & MEN, 2017) highlighted the strategic role of regional academies in the development of these programs.

Sport-studies hubs are mainly located in major cities such as Casablanca, Rabat, Marrakech, and Fez. They are often hosted within public high schools, with adjusted schedules that allow students to attend daily training while continuing their education. Each student benefits from dual supervision: specialized teachers for academic follow-up and certified coaches for sports preparation. Some institutions also offer housing as well as medical and nutritional support. Despite these advances, the deployment of programs remains geographically limited. Significant disparities exist between regions in terms of access, infrastructure, and sports specialization. Morocco would benefit from generalizing this model, particularly in rural areas, and from strengthening the psychosocial and academic monitoring of student-athletes to ensure their overall success.

## **Theoretical Framework and Literature Review**

### *Theoretical framework*

The theoretical framework of this study is based on three pillars:

- (1) Self-determination theory, which emphasizes the importance of feelings of competence and autonomy in personal development (Deci & Ryan, 2000);
- (2) Positive youth development models (Petitpas et al., 2009), highlighting the structuring role of sports supervision in socio-emotional development;
- (3) The ecosystem perspective (Bronfenbrenner, 1979), which stresses the interaction between school, family, and sports environments.

### *Empirical Data*

*Recent international research* confirms the psychosocial benefits of sport-studies programs. For example, Thompson et al. (2022) observed better emotional regulation, higher self-esteem, and greater resilience among Canadian student-athletes. A meta-analysis by Thompson et al. (2023) revealed positive effects on motivation, autonomy, and social integration. In the Moroccan context, Harfi and El-Jazouli (2022) noted the challenges of balancing sporting demands with academic success, but also reported significant social recognition for student-athletes.

However, the literature remains limited regarding measured effects in terms of perceived stress, socio-emotional difficulties, and direct comparison with control groups. This justifies the interest of this comparative study, focused on a Moroccan context that is still scarcely explored scientifically.

### *Research Gaps*

Despite growing literature on the positive effects of sport-studies programs, several blind spots persist.

First, most existing studies take place in Western contexts (Europe, North America, Oceania), limiting the transferability of results to sociocultural contexts like Morocco (Aquilina, 2013; Storm, Henriksen & Larsen, 2021).

Second, very few studies adopt a comparative approach with a control group to measure the net effect of such programs on psychosocial indicators (Li et al., 2022). Third, literature often focuses on general measures of well-being, without delving into specific dimensions such as perceived stress management, socio-affective difficulties, or identity balance between school and sport roles (Sorkkila & Ryba, 2020).

In addition, the potential effects of social representations, family pressure, or the role of schools in maintaining young athletes' engagement remain understudied (Knight et al., 2018; Stambulova et al., 2021). This gap is particularly significant in Morocco, where social aspirations through sport are sometimes perceived as a means of upward mobility, especially in disadvantaged backgrounds.

Hence, it is essential to conduct research rooted in local realities, using mixed and comparative tools, to shed light on the psychosocial issues of sport-studies pathways and to formulate recommendations adapted to the specific needs of Moroccan youth athletes.

## **Methodology**

### *Research Design*

A mixed-method approach was adopted to explore psychological, social, and emotional effects comprehensively. The design combined a cross-sectional comparative method with interpretative qualitative analysis. This methodological triangulation allowed the integration of objectified data and lived narratives, offering a nuanced understanding of Moroccan student-athletes' psychosocial development.

Two balanced groups were formed:

- 120 students enrolled in sport-studies programs in public institutions,
- 120 student-athletes not enrolled in such programs but regularly practicing a sport in a club.

Recruitment took place in different regions (Rabat-Salé-Kénitra, Casablanca-Settat, Fez-Meknes) to ensure geographic and socio-economic diversity.

### *Data Collection*

The following internationally validated instruments were used:

- SDQ (Strengths and Difficulties Questionnaire) to measure prosocial skills and emotional difficulties.
- PSS (Perceived Stress Scale) by Cohen to assess perceived stress over the past four weeks.
- Rosenberg's Self-Esteem Scale to measure global self-esteem.

Questionnaires were administered under supervision in a neutral school environment between March and May 2024. A pre-test was conducted with 10 students to validate comprehension of items. Semi-structured qualitative interviews were conducted with 20

student-athletes and 5 coaches, exploring psychosocial resources, constraints, and emotional regulation strategies. All interviews were recorded and fully transcribed.

### *Data Analysis*

Quantitative data were analyzed using SPSS v.27. After normality checks (Shapiro-Wilk tests), intergroup comparisons were conducted through independent t-tests. Multiple linear regressions examined the effect of program participation on self-esteem, stress, and social adaptation scores, controlling for age, gender, region, and school level.

Qualitative analysis, performed with NVivo, followed an inductive thematic approach. Transcripts were coded into emerging categories: sense of accomplishment, social pressure, pedagogical support, and emotional resilience. This analysis helped cross-check students' perceptions with statistical trends to illustrate or nuance quantified effects.

Cronbach's alpha confirmed the reliability of scales (> 0.81 for SDQ; 0.83 for PSS; 0.88 for Rosenberg), ensuring robustness of the measures. Triangulation strengthened internal and external validity by aligning measured dimensions with perceived realities in the field.

A complementary component involved participant observation in two sport-studies hubs in Rabat and Casablanca. This four-week field immersion provided deeper insight into daily dynamics, mental workload, student-teacher-coach interactions, and actual pedagogical adjustments. Observations were recorded in field notes and summarized into thematic sheets, especially regarding competition-related stress, peer support, and time distribution between school and sport.

Additionally, six professionals (2 coaches, 2 reference teachers, and 2 social workers) were interviewed to enrich understanding of support systems. These interviews were triangulated with students' responses, offering a systemic perspective on the sport-studies environment. Finally, a comparative analysis of students' performance in national exams (first-year baccalaureate and common core) was conducted between the sport-studies group and the control group. This quantitative data was cross-checked with psychometric scores to identify possible correlations between academic achievement and psychosocial well-being.

## **Results**

### *Descriptive Statistics*

The results were first analyzed through descriptive statistics in order to establish an average psychosocial profile of both groups.

Table 1

#### *Average psychosocial scores by group*

<b>Indicator</b>	<b>Group Sport-Study (n=120)</b>	<b>Groupe Control (n=120)</b>	<b>p-value</b>
Estime de soi (Rosenberg)	25,6 ± 3,2	21,8 ± 3,7	< 0,001
Stress perçu (PSS)	16,3 ± 4,1	20,5 ± 4,6	< 0,001
Score prosocial (SDQ)	7,1 ± 1,5	5,9 ± 1,7	< 0,01

The table presents the average psychosocial scores observed in the two groups (Sport-Studies and Control), along with statistical significance values (p-values). Student-athletes in the

sport-studies group displayed a significantly higher average self-esteem score ( $25.6 \pm 3.2$ ) compared to the control group ( $21.8 \pm 3.7$ ), with a highly significant difference ( $p < 0.001$ ). Similarly, their perceived stress level was significantly lower ( $16.3 \pm 4.1$  vs.  $20.5 \pm 4.6$ ;  $p < 0.001$ ). Finally, the prosocial score from the SDQ was also higher in the sport-studies group ( $7.1 \pm 1.5$ ) compared to the control group ( $5.9 \pm 1.7$ ), with a significant difference ( $p < 0.01$ ). These results support the hypothesis that participation in a sport-studies program positively contributes to the psychosocial well-being of young athletes.

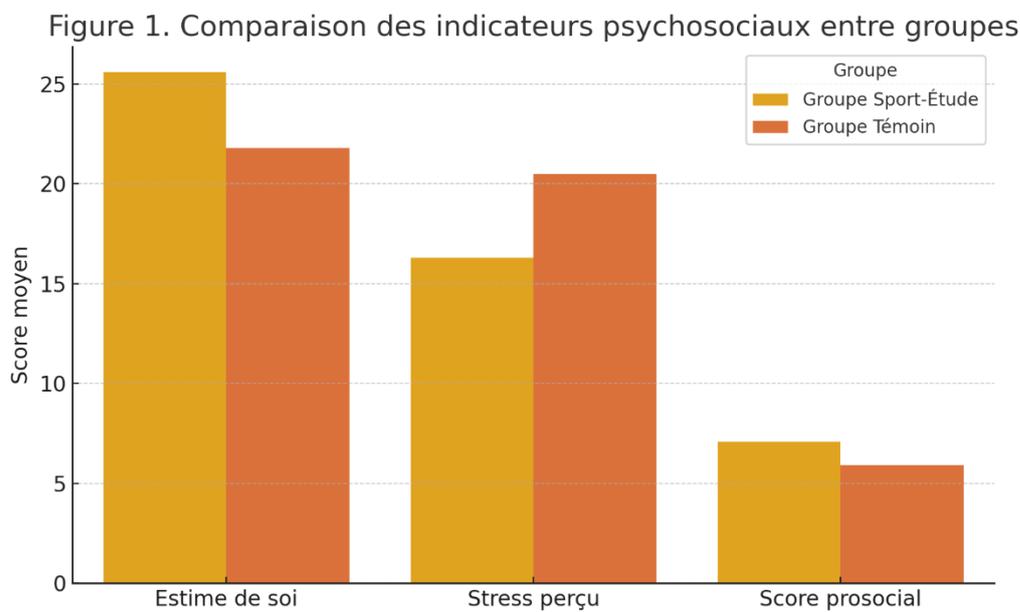


Figure 1. Graphical comparison of psychosocial indicators between groups

The figure illustrates a graphical comparison of psychosocial indicators (self-esteem, perceived stress, prosocial behavior) between the two groups studied: students enrolled in sport-studies programs and student-athletes in the control group. Results show that the sport-studies group had a higher average self-esteem score and lower perceived stress, confirming the program's positive effect on emotional regulation. Regarding the prosocial score, although both groups displayed close results, a slight advantage was observed in favor of the sport-studies group. This visual representation supports the hypothesis of a favorable impact of sport-studies programs on psychosocial development.

#### *Multiple Regression Results*

Multiple regression analysis confirmed that participation in sport-studies programs is a significant predictor:

- Self-esteem:  $\beta = +0.42$ ;  $p < 0.001$
- Perceived stress:  $\beta = -0.39$ ;  $p < 0.001$
- Prosocial score:  $\beta = +0.29$ ;  $p = 0.004$

These results were obtained after controlling for confounding variables (gender, age, school level, region).

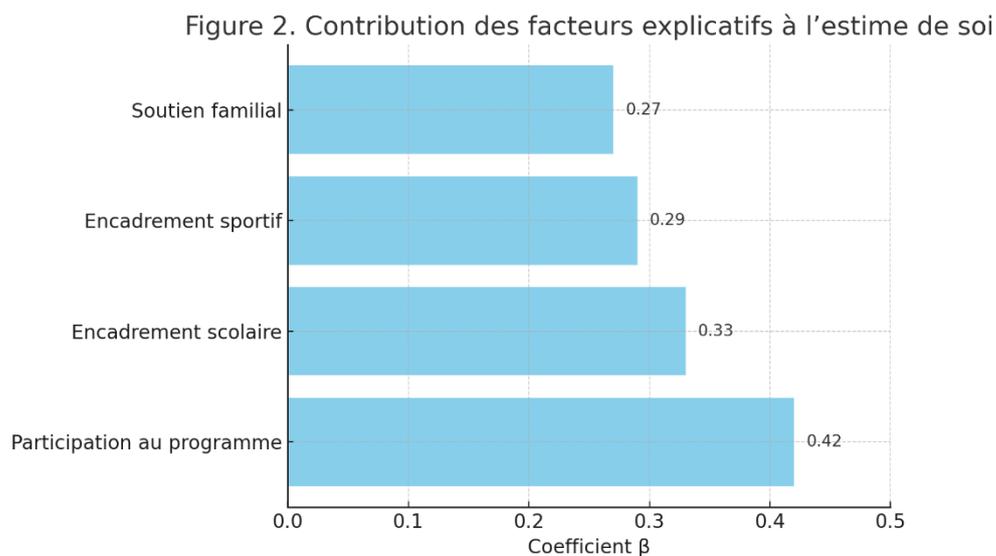


Figure 2. Contribution of explanatory factors to self-esteem – regression

The figure presents the results of multiple regression analysis aimed at identifying the main explanatory factors of self-esteem among student-athletes. The  $\beta$  coefficient indicates the relative importance of each variable. Participation in the sport-studies program is the strongest predictor ( $\beta = 0.42$ ), followed by academic supervision ( $\beta = 0.33$ ), sports supervision ( $\beta = 0.29$ ), and family support ( $\beta = 0.27$ ). These results show that student-athletes' self-esteem depends on a set of interdependent factors, underlining the importance of the institutional and organizational framework provided by sport-studies programs. The program's effect thus goes beyond the sporting dimension alone, reflecting a multidimensional supportive environment.

#### *Complementary Qualitative Analysis*

Thematic analysis of interviews revealed four major themes:

- Personal valorization: "Being in the program gives me confidence in myself."
- Time pressure: "It's difficult to do everything, but we learn to manage."
- Social support and supervision: "The coach is like a second parent."
- Resilience: "Even when we lose, we know we have progressed."

Figure 3. Répartition des thèmes issus de l'analyse qualitative

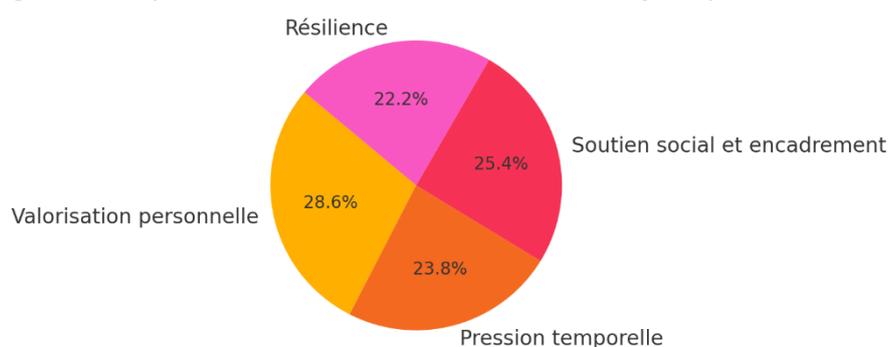


Figure 3. Map of emerging themes – NVivo analysis

These testimonials validate the statistical results by highlighting the structuring role of the program in psychosocial development.

Field observations revealed notable differences between institutions. In Rabat, student-athletes benefited from reinforced academic support (mandatory remedial hours), resulting in lower perceived stress (average PSS score of 15.2 vs. 18.7 in Casablanca). Student-coach interactions were also characterized by more frequent dialogue and positive communication, fostering more stable self-esteem.

Interviews with professionals identified three key factors in psychosocial development:

- Regularity of psychological follow-up, often neglected in institutions lacking specialized staff.
- Quality of school-sport coordination, perceived as essential for student motivation.
- Sense of belonging to the group, strengthened by competitions and joint extracurricular activities.

Finally, correlation between academic results and self-esteem scores was moderately positive ( $r = 0.46$ ), suggesting that academically stronger students also tended to perceive themselves more positively in psychosocial terms.

#### *Illustrative quotes*

“Thanks to the supervision here, I’ve learned to manage pressure before competitions. Before, I often had stomach aches from stress.” (Student-athlete, Rabat)

“Having an adapted schedule allows me to follow my classes without missing training. I feel supported.” (Student-athlete, Casablanca)

“We are like a family, we help each other, even outside training. It really helped me gain confidence.” (Student-athlete, Rabat)

Table 2

*Comparative summary of average scores – PSS, SDQ, Self-Esteem*

Indicators	Groupe Sport-Study	Group Control
Perceived stress (PSS)	16,4	19,2
Social difficulties (SDQ)	11,1	13,8
Self-esteem (Rosenberg)	27,6	22,3

The observed differences are statistically significant ( $p < 0.05$ ), confirming the psychosocial benefits of the sport-studies program.

## **Discussion**

### *Interpretation*

The results obtained corroborate previous research on the role of sport-studies programs in the psychosocial development of young athletes (Storm & Henriksen, 2020; Knight et al., 2016). The significant increase in self-esteem observed in the sport-studies group can be explained by social recognition and the valorization of sporting engagement within an institutional framework (Deci & Ryan, 2000). Furthermore, the reduction in perceived stress

reinforces the hypothesis that the program's structure, specialized supervision, and training regularity contribute to improved psychological balance (Martindale et al., 2007).

Qualitative results strengthen this interpretation, showing that feelings of competence, resilience in the face of setbacks, and support from reference adults (coaches, teachers) are key factors. This echoes the conclusions of Vella et al. (2011) on the role of positive sports environments in shaping personal identity and emotional regulation in adolescents.

#### *Practical Implications*

The implications for Moroccan policymakers are numerous. First, the beneficial effects on self-esteem and stress management suggest that sport-studies programs should not be marginalized but rather consolidated in public institutions. Strengthening psychosocial monitoring of student-athletes is recommended, including the integration of school psychologists and modules on time management and personal development.

Moreover, the positive impact on prosocial behavior supports greater awareness among supervisors of their educational role. As emphasized by Petitpas et al. (2009), the learning environment should be intentionally structured to foster the transfer of sports skills into everyday life.

Finally, consideration of student-athletes' specific constraints (fatigue, travel, competitions) implies a degree of pedagogical flexibility, as advocated by Henriksen et al. (2014). This could involve adjusted schedules, individualized support, and stronger collaboration between teachers and sports staff.

#### *Limitations and Observed Negative Effects*

Although the results highlight notable psychosocial benefits, several limitations and negative effects must be acknowledged. Some students reported constant pressure due to the need to succeed in both school and sport. This dual demand may generate mental fatigue, chronic stress before competitions or exams, and sometimes a sense of burnout.

Societal expectations in Morocco play an ambivalent role. On one hand, sport-studies programs are seen as a privilege or a means of social mobility. On the other hand, implicit pressure from families and society weighs heavily on students. Several participants mentioned tensions with their families when academic performance declined, even temporarily.

In disadvantaged socioeconomic contexts, sport is sometimes perceived as a path out of poverty. This further intensifies the psychological burden for young athletes, who feel they must "succeed to lift the family out of hardship." Although external to the program itself, these perceptions significantly affect student-athletes' well-being.

Finally, interregional disparities persist in terms of infrastructure, psychological support, and academic assistance. These inequalities can exacerbate structural disadvantages for some students and limit the universality of the program's benefits.

## Conclusion

### *Summary of results*

This study highlighted the overall positive impact of sport-studies programs on the psychosocial development of Moroccan student-athletes. Through a mixed-method approach, both quantitative results (higher self-esteem, lower levels of perceived stress, stronger prosocial behaviors) and qualitative findings (resilience, sense of belonging, recognition by peers and supervisors) converge to demonstrate the real educational added value of these programs. However, the study also revealed certain tensions and constraints, including performance stress, mental fatigue, social pressure, and regional disparities.

### *Research contributions*

This work helps fill a scientific gap concerning the concrete effects of sport-studies programs in the Moroccan context, still scarcely explored (Harfi & El-Jazouli, 2022; Mortabit et al., 2025). By mobilizing rigorous empirical tools and anchoring the analysis in field realities, the study offers a nuanced understanding of both the benefits and limitations of this hybrid educational model. It also introduces a critical reading of performance logics and social mobility expectations through sport, in connection with parental and societal representations specific to Morocco.

### *Policy and Practical Recommendations*

- Integrate sport-studies programs into national strategies for education, youth, and social inequality reduction.
- Ensure multidisciplinary supervision in all hubs (psychologists, educators, mental trainers), drawing on proven practices (Martinent & Ferrand, 2017).
- Strengthen coordination between the Ministry of Education, the Ministry of Sports, sports federations, and schools (Ministère de la Jeunesse et des Sports & MEN, 2017).
- Standardize access to sport-studies programs nationwide, particularly targeting rural and disadvantaged areas.
- Establish psychosocial monitoring mechanisms for student-athletes and provide continuous training for supervisors.

### *Research Perspectives*

Several avenues for future research could extend this study. First, longitudinal studies would be valuable to observe the psychosocial evolution of student-athletes over several years, especially regarding transitions to higher education or withdrawal from competitive sport. Second, a broader comparative approach including other Moroccan regions would provide better insight into territorial inequalities in supervision and resources. Differences between urban and rural contexts also deserve specific attention.

Third, giving voice to parents and teachers in future studies would help capture expectations, social representations of sport, and the forms of support or pressure they exert.

Finally, integrating sociological and cultural analysis tools would help understand how young athletes internalize norms of success, gender roles in sport, and the position of sport as a vehicle for social mobility in Morocco.

## Contributions

This research makes a significant contribution to the understanding of the psychosocial

development of student-athletes within the Moroccan context. By adopting a mixed-methods approach, it provides a structured framework to evaluate how sport-studies programs influence self-esteem, stress management, and social adaptation. The findings demonstrate that student-athletes enrolled in these programs show stronger psychosocial outcomes than their peers, with performance differences supported by both quantitative and qualitative evidence. These results confirm the central role of structured institutional environments, quality of supervision, and coordinated academic-sport pathways in fostering resilience, prosocial behaviors, and personal confidence. Beyond theoretical insights, the study also provides practical recommendations for policymakers and education authorities, emphasizing the need to strengthen psychosocial monitoring, improve training for supervisors, and expand access to programs nationwide, particularly in disadvantaged areas. It thus contributes both conceptually and operationally to enhancing the sustainability and effectiveness of sport-studies programs in emerging educational contexts.

### Author Contributions

Removed for anonymity

### Acknowledgment

Removed for anonymity

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