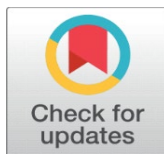
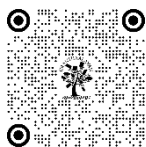


EXAMINING DOPING VIOLATIONS AMONG INDIAN WOMEN IN SPORTS

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ABSTRACT

This study examines the doping violations among Indian women in sports, emphasizing the substances most frequently detected and their physiological and psychological impacts. The study sheds light on the unique vulnerabilities of female athletes to performance-enhancing drugs and examines trends in substance use, health consequences, and the broader implications for sports integrity. By analyzing data from 2009 to 2023, the paper highlights the need for targeted anti-doping education, gender-responsive testing protocols, and comprehensive support systems. The ultimate goal is to foster a sporting environment where women can compete safely and fairly, free from the risks associated with banned substances.

Keywords: Doping, Performance-Enhancing Substances, Indian Sportswomen, Women in Sports, Anti-Doping Education, Anabolic Steroids

1. INTRODUCTION

Doping remains a persistent and evolving challenge in the world of sports, undermining the principles of fair play and athlete well-being (WADA, 2023). For Indian women athletes, the issue is particularly complex, as they face not only the universal pressures of elite competition but also unique physiological and social factors that may influence their vulnerability to performance-enhancing substances (Kaur & Singh, 2021). Despite the efforts of organizations such as the National Anti-Doping Agency (NADA) and the World Anti-Doping Agency (WADA) to promote clean sport through awareness campaigns and rigorous testing, the use of banned substances continues to surface in various sporting disciplines (NADA, 2023).

The consequences of doping extend far beyond immediate competitive advantages. Female athletes, in particular, may experience a range of adverse health effects, including hormonal disruptions, reproductive issues, and psychological impacts, which can be more pronounced due to gender-specific physiological responses (Sharma, 2024). The drive to excel, combined with limited access to reliable information and the proliferation of unregulated supplements, further complicates the landscape for women in Indian sports (Indian Express, 2022).

This study aims to provide a comprehensive and data-driven analysis of doping violations among Indian women sportspersons. Specifically, it seeks to:

- 1) Determine the frequency of doping violations by the Indian sportswomen during 2009 to 2023.
- 2) Provide sport-wise prevalence of doping cases to determine which disciplines reported the highest incidence of violations during 2009 to 2023.
- 3) Present the year-wise distribution of doping violations to observe changes over time.

2. METHODOLOGY

This research adopts a descriptive, retrospective approach to analyze doping violations among Indian women athletes over a fifteen-year period, from 2009 to 2023. The study relies exclusively on secondary data drawn from official and publicly accessible sources, ensuring objectivity and transparency in the research process.

Data Sources: The primary data for this study were collected from the official records of the National Anti-Doping Agency (NADA), including published decisions of the Anti-Doping Disciplinary Panel (ADDP). Supplementary information was obtained from annual and special reports issued by the World Anti-Doping Agency (WADA). These sources provided comprehensive details on the number of athletes sanctioned, the timing and frequency of violations, the sports disciplines involved, and the specific substances detected.

Data Organization and Analysis: The collected data were systematically organized into structured tables and visual charts to facilitate the identification of trends and patterns.

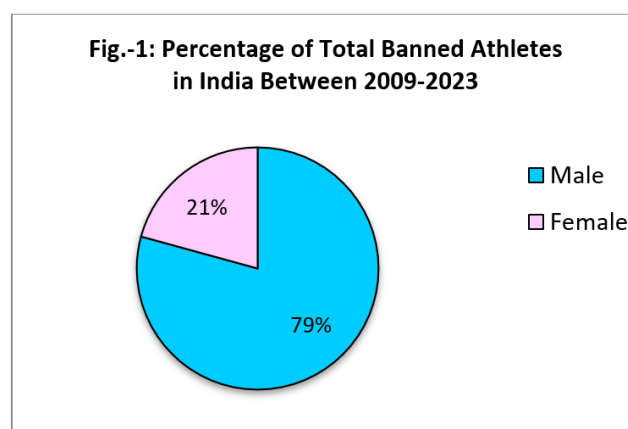
Scope and Limitations: This study did not involve any direct contact with athletes or the collection of primary data. All findings are derived from secondary, publicly available sources. As a result, the analysis is limited by the accuracy and completeness of the official records. However, the use of multiple reputable sources enhances the reliability of the findings.

3. FINDINGS AND DISCUSSION

1) Frequency of Doping Violations:

Table 1 Banned Athletes by NADA from 2009 to 2023

Male	Female	Total
1108	290	1398



The analysis of doping violations among Indian female athletes revealed a total of 290 cases from 2009 to 2023, as per NADA records. During the same period, 1108 male athletes were banned, indicating that female violations accounted for approximately 22.2% of the total cases.

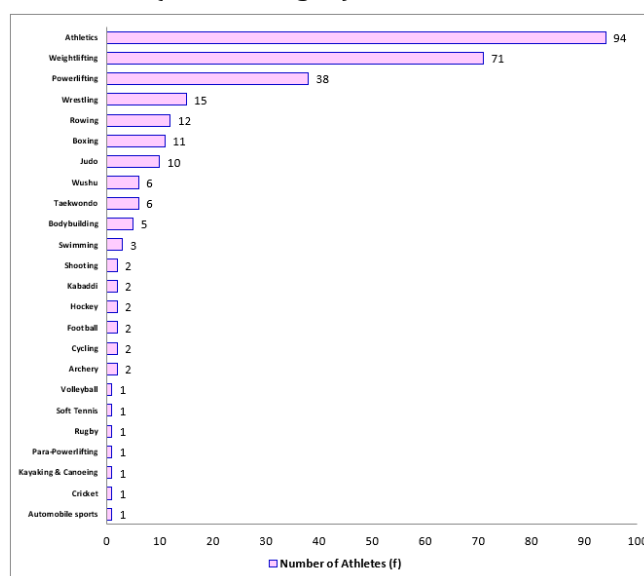
2) Sport-Wise Prevalence of Doping Violations:

Table 2 Sport-Wise Analysis of Doping Cases among Women Athletes

Banned by NADA from 2009 to 2023

S. No.	Sport	Number of Athletes (f)	% of Total Cases
1.	Archery	2	0.69
2.	Athletics	94	32.41
3.	Automobile sports	1	0.34
4.	Bodybuilding	5	1.72
5.	Boxing	11	3.79
6.	Cricket	1	0.34
7.	Cycling	2	0.69
8.	Football	2	0.69
9.	Hockey	2	0.69
10.	Judo	10	3.45
11.	Kabaddi	2	0.69
12.	Kayaking & Canoeing	1	0.34
13.	Para-Powerlifting	1	0.34
14.	Powerlifting	38	13.10
15.	Rowing	12	4.13
16.	Rugby	1	0.34
17.	Shooting	2	0.69
18.	Soft Tennis	1	0.34
19.	Swimming	3	1.03
20.	Taekwondo	6	2.06
21.	Volleyball	1	0.34
22.	Weightlifting	71	24.48
23.	Wrestling	15	5.17
24.	Wushu	6	2.06
	TOTAL	290	100%

Athletics and weightlifting emerged as the sports with the highest number of doping violations among female athletes, accounting for 32.41% and 24.48% of the total cases, respectively. Powerlifting (13.10%) and wrestling (5.17%) also recorded significant numbers of violations (Table-2, Fig.-2).

**Figure 2** Game Wise Analysis of Doping Cases among Women Athletes

Banned by NADA from 2009 to 2023

3) Year-Wise Analysis of Doping Violations:

Table 3

Year Wise Analysis of Doping Violations among Indian Sportswomen

Year	No. of Doping Cases	Year	No. of Doping Cases	Year	No. of Doping Cases
2009	2	2014	35	2019	28
2010	11	2015	13	2020	13
2011	19	2016	26	2021	40
2012	28	2017	13	2022	13
2013	19	2018	13	2023	17

The analysis of data in table-3 reveals that the doping violations observed fluctuating trends over the years, with peaks in 2014 (35 cases) and 2021 (40 cases). A significant dip was observed during 2020 (13 cases), which may be attributed to the COVID-19 pandemic disrupting sports events and testing programs.

4. DISCUSSION

The analysis of doping violations among Indian women athletes from 2009 to 2023 reveals several important trends and insights. Although female athletes accounted for a smaller proportion of total doping cases compared to their male counterparts, the presence of 290 violations is a clear indication that doping remains a significant issue in women's sports in India.

A closer look at the sport-wise distribution highlights that athletics and weightlifting are the most affected disciplines, together comprising over half of all doping cases among women. This pattern suggests that the intense physical demands and competitive pressures in these sports may drive athletes to seek performance enhancement through prohibited means. Powerlifting and wrestling also reported notable numbers, indicating that strength- and power-based sports are particularly susceptible to doping violations.

The year-wise analysis shows that the incidence of doping violations has not followed a consistent trajectory, with notable spikes in 2014 and 2021. These peaks may reflect periods of increased testing, heightened competition, or greater awareness and reporting. Conversely, the sharp decline in 2020 likely resulted from the widespread disruption of sporting events and anti-doping activities during the COVID-19 pandemic.

Underlying these trends are several contributing factors. Limited access to reliable information, inadequate anti-doping education, and the widespread availability of unregulated supplements all increase the risk of inadvertent or intentional doping among women athletes. Additionally, gender-specific physiological responses can make the consequences of doping more severe for women, amplifying the need for targeted interventions.

The findings underscore the importance of strengthening anti-doping education, implementing gender-sensitive testing protocols, and providing comprehensive support systems for women athletes. Such measures are crucial not only for reducing the prevalence of doping but also for safeguarding the health and careers of female sportspersons and upholding the integrity of Indian sports.

5. CONCLUSION

This study provides a comprehensive overview of doping violations among Indian women athletes over a fifteen-year period, highlighting both the scale of the issue and the sports most affected. The data clearly show that athletics and weightlifting are particularly vulnerable to doping, with fluctuating trends observed across the years.

To address these challenges, there is a pressing need for robust, targeted anti-doping education and awareness programs tailored specifically for women athletes. Regulators and sports organizations must also prioritize the regulation of supplements and the implementation of gender-responsive testing and support mechanisms. By adopting a holistic approach that addresses both the root causes and the unique vulnerabilities of women in sport, India can move closer to ensuring a safe, fair, and supportive environment for its female athletes.

Ultimately, the fight against doping is not just about enforcing rules, but about protecting the well-being and aspirations of athletes and preserving the true spirit of sport.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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