

Journal of Social Science and Human Research Studies

Volume: 01 Issue: 04 October-2025

Cannabis Use and Athletic Performance: Implications for Health Education and Sports Medicine

Okudaye, N. Ismaila (Ph.D)

Department of Health Education, Faculty of Education, University of Delta, Agbor.

Nwabuwe, Sunday Nathaniel

Department of Human Kinetics and Sports Science Education, Faculty of Education, University of Delta, Agbor.

Corresponding Author: Nwabuwe, Sunday Nathaniel

Department of Human Kinetics and Sports Science Education,

Faculty of Education, University of Delta, Agbor.

ORCID: <https://orcid.org/0000-0002-3425-5402><https://scholar.google.com/citations?user=eGAE2WkAAAAJ&hl=en><https://independent.academia.edu/sundaynwabuwe>https://www.researchgate.net/profile/Sunday-Nwabuwe?ev=hdr_xprf**Published Date: October 30, 2025****Article DOI: 10.65150/EP-jsshrs/V1E4/2025-10**

ABSTRACT: This study examined the relationship between cannabis use and athletic performance, focusing on its implications for health education and sports medicine. The research explored how cannabis consumption affects physiological and psychological processes relevant to athletic functioning, including endurance, coordination, focus, and recovery. A mixed-methods research design combining quantitative and qualitative approaches was employed. Data were gathered through structured questionnaires distributed to athletes across multiple sports disciplines in Delta State, Nigeria. Statistical analyses were conducted using descriptive and inferential methods, while qualitative insights were drawn from focused interviews with selected respondents. Findings revealed that cannabis use has complex effects on athletes, with short-term perceived benefits such as reduced anxiety and enhanced focus often overshadowed by long-term detrimental outcomes, including impaired motor coordination, reduced cognitive function, and increased cardiovascular strain. The study underscores the need for robust educational and medical interventions to address the misconceptions surrounding cannabis use among athletes. Recommendations include targeted health education campaigns, policy enforcement on drug use in sports, and enhanced collaboration between coaches, medical practitioners, and educators.

KEYWORDS: Cannabis, Athletic Performance, Health Education, Sports Medicine, Substance Use.

INTRODUCTION

Athletic performance is influenced by a range of physiological, psychological, and environmental factors, among which substance use has gained increasing attention. Cannabis, once viewed solely as an illicit drug, is now at the center of global debate due to its growing medical legalization and changing social attitudes. Despite evolving perceptions, cannabis remains controversial in sports contexts, where its potential to alter performance and health outcomes continues to raise ethical and medical questions (Hall et al., 2020).

In recent years, the use of cannabis among athletes has been reported across different sporting levels—from recreational users to professionals. Some athletes claim that cannabis helps them manage pain, anxiety, and recovery stress (Ware et al., 2018), while others use it for its purported ability to enhance focus or reduce pre-competition tension. However, empirical research has demonstrated that cannabis use can negatively affect coordination, decision-making, and cardiovascular efficiency (Kennedy & Bonetti, 2019). These impairments pose significant concerns for sports medicine professionals and health educators responsible for safeguarding athlete well-being and performance integrity.

The issue of cannabis use in sports extends beyond health and performance to include legal and ethical implications. The World Anti-Doping Agency (WADA) continues to list cannabis as a prohibited substance during competition due to its potential to endanger athletes and alter fair play (WADA, 2023). Yet, the persistence of cannabis use among athletes highlights gaps in health education, awareness, and preventive strategies. In Nigeria, the increasing accessibility of cannabis and limited enforcement of anti-doping regulations have made substance use among young athletes a public health challenge. The perception that cannabis enhances physical performance persists despite scientific evidence to the contrary

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Corresponding Author: Nwabuwe, Sunday Nathaniel

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(Olawole & Nwankwo, 2021). Health educators and sports medicine practitioners therefore face the dual task of correcting misinformation and promoting health-conscious choices among athletes.

This study seeks to analyze cannabis use and its implications for athletic performance, emphasizing the educational and medical dimensions of intervention. By integrating perspectives from health education and sports medicine, the research contributes to a more holistic understanding of how substance use shapes athletic outcomes and informs evidence-based policy development.

Statement of the Problem

Despite growing awareness of the risks associated with substance use in sports, cannabis consumption among athletes remains an ongoing concern. Many athletes still perceive cannabis as a harmless or even beneficial substance that can alleviate pain, anxiety, or pre-competition stress (Ware et al., 2018). This misconception persists despite clear evidence linking cannabis use to impaired motor coordination, slower reaction times, reduced aerobic capacity, and altered judgment—all of which negatively affect athletic performance (Hall et al., 2020).

In Nigeria, the prevalence of cannabis use among youths, including athletes, continues to rise due to weak regulatory enforcement, social acceptance, and limited access to accurate health information (Olawole & Nwankwo, 2021). This trend threatens the integrity of sports competitions and undermines national efforts to promote drug-free athletic participation. While international bodies like WADA and national sports commissions have policies prohibiting cannabis use, their effectiveness is limited by inadequate education, poor testing infrastructure, and insufficient counseling programs for athletes.

The problem is therefore twofold: first, the physiological and psychological effects of cannabis may compromise athlete health and performance; and second, the absence of comprehensive health education and policy implementation exacerbates the problem. This study was undertaken to examine how cannabis use influences athletic performance and to identify practical strategies that health education and sports medicine can employ to mitigate its effects.

Objectives of the Study

The main objective of this study was to examine cannabis use and its impact on athletic performance, with a specific focus on the implications for health education and sports medicine.

The specific objectives were to:

1. Determine the prevalence and patterns of cannabis use among athletes in Delta State, Nigeria.
2. Assess the perceived effects of cannabis use on physical and psychological performance.
3. Examine the relationship between cannabis use and athletic performance indicators such as endurance, coordination, and focus.
4. Explore the role of health education and sports medicine in addressing cannabis use among athletes.
5. Recommend evidence-based strategies for reducing cannabis-related risks in sports environments.

Research Questions

To guide the study, the following research questions were formulated:

1. What is the prevalence and pattern of cannabis use among athletes in Delta State?
2. How do athletes perceive the effects of cannabis use on their physical and psychological performance?
3. What relationship exists between cannabis use and athletic performance variables such as coordination, focus, and endurance?
4. How can health education and sports medicine contribute to mitigating cannabis use in sports?

Research Hypotheses

To test the relationships among the study variables, the following null hypotheses were developed:

1. There is no significant relationship between cannabis use and athletes' physical performance.
2. There is no significant relationship between cannabis use and athletes' psychological performance.
3. There is no significant relationship between the level of health education exposure and athletes' awareness of the effects of cannabis use.

SIGNIFICANCE OF THE STUDY

This study is significant for several reasons. First, it provides empirical evidence on the extent and effects of cannabis use among athletes in Nigeria, a subject often neglected in local sports and health research. The findings offer valuable insights for coaches, sports administrators, and policymakers seeking to enhance performance integrity and athlete welfare.

Second, the study underscores the role of health education in promoting behavioral change and creating awareness of the dangers of substance use. Through educational interventions, athletes can make informed decisions that protect both their health and careers.

Third, for sports medicine practitioners, the study highlights the need for continuous medical monitoring, counseling, and rehabilitation programs tailored to athletes' specific needs. These insights contribute to a more integrated approach where education, health policy, and sports medicine collaborate to curb drug misuse.

Lastly, the findings can serve as a foundation for future research and guide policy frameworks that align with global anti-doping standards while considering Nigeria's cultural and institutional realities.

LITERATURE REVIEW

Concept of Cannabis Use

Cannabis, also known as marijuana, is derived from the *Cannabis sativa* plant and is one of the most widely consumed psychoactive substances globally. The plant contains over 100 cannabinoids, among which tetrahydrocannabinol (THC) is the principal psychoactive compound responsible for its intoxicating effects (Hall et al., 2020). Cannabis can be consumed through smoking, vaporization, or ingestion, and its use elicits varying physiological and psychological outcomes depending on dosage, frequency, and individual differences (Ware et al., 2018).

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Globally, the use of cannabis has expanded beyond recreational contexts to include medicinal purposes such as the management of chronic pain, insomnia, and anxiety (Hill, 2019). However, in the realm of sports, the drug remains controversial due to its capacity to alter perception, reaction time, and coordination—key factors influencing athletic performance. Despite this, several athletes continue to use cannabis to cope with performance anxiety and physical discomfort associated with intensive training or competition (Kennedy & Bonetti, 2019).

Cannabis Use and Athletic Performance

The relationship between cannabis use and athletic performance has been a subject of increasing academic attention. Some studies report that cannabis users perceive benefits such as reduced muscle tension and enhanced focus during training (Ware et al., 2018). However, scientific evidence contradicts these perceptions, showing that THC can impair balance, coordination, and psychomotor performance (Wong et al., 2021). These impairments reduce athletes' ability to respond quickly, particularly in sports requiring precision and rapid decision-making.

Research has also demonstrated that cannabis use affects cardiovascular and respiratory functions. Hall et al. (2020) reported that smoking cannabis increases heart rate and reduces oxygen-carrying capacity, leading to diminished endurance. Similarly, Renaud and Cormier (2019) found that cannabis disrupts motor learning and short-term memory, both critical for skill acquisition in sports. Consequently, while some athletes may experience temporary psychological relaxation, the long-term physiological and cognitive drawbacks outweigh any perceived benefits.

Health Education and Substance Use in Sports

Health education plays a crucial role in shaping athletes' attitudes toward substance use. According to Okoro and Ezeani (2021), effective health education programs emphasize preventive strategies, awareness campaigns, and behavioral change interventions. In sports contexts, such education aims to inform athletes about the health risks associated with psychoactive substances, promote responsible decision-making, and foster adherence to doping regulations.

Despite these efforts, inadequate funding, limited training of sports educators, and weak institutional frameworks hinder the success of health education programs in Nigeria (Olawole & Nwankwo, 2021). Many athletes still lack accurate information about the physiological effects of cannabis, leading to its continued misuse. Integrating health education into sports development programs is therefore essential for cultivating drug-free sports culture and protecting athlete well-being.

Sports Medicine and Cannabis Use

Sports medicine focuses on the prevention, diagnosis, and treatment of injuries and health conditions related to physical activity. The intersection of sports medicine and substance use has become more prominent as medical professionals increasingly encounter athletes who use cannabis for pain management or stress relief (Hill, 2019). While some therapeutic cannabinoids have legitimate medical applications, unsupervised or recreational use poses significant health risks.

According to Kennedy and Bonetti (2019), chronic cannabis consumption can result in cardiovascular complications, hormonal imbalances, and cognitive decline—all detrimental to sustained athletic performance. Sports medicine practitioners therefore play a critical role in educating athletes on the physiological consequences of drug use, conducting routine health screenings, and providing counseling and rehabilitation services when necessary.

Theoretical Framework

This study draws on the Health Belief Model (HBM), which explains health-related behavior through individuals' perceptions of risk, benefits, and self-efficacy. The HBM posits that people are more likely to engage in health-promoting behaviors when they believe that the risks of a harmful behavior outweigh its benefits (Rosenstock et al., 1988).

Applied to this study, the model suggests that athletes' decisions to use or abstain from cannabis are influenced by their perceptions of its risks and potential advantages. If athletes underestimate the harmful effects of cannabis or overestimate its benefits for performance, they are more likely to engage in its use. Health education interventions, therefore, must target these perceptions by emphasizing accurate information, perceived susceptibility, and the benefits of abstinence to encourage behavioral change.

Empirical Review

Several empirical studies have explored the prevalence and effects of cannabis use among athletes. For instance, Hall et al. (2020) found that over 25% of young adult athletes in their study had used cannabis at least once, primarily for relaxation and recovery. Similarly, Ware et al. (2018) observed that athletes in contact sports reported higher rates of cannabis use due to chronic pain and injury management needs.

In Nigeria, Okoro and Ezeani (2021) reported an increasing prevalence of cannabis use among university athletes, citing peer influence and inadequate drug education as major contributing factors. Their study also revealed that many athletes underestimated the health risks associated with cannabis use, believing it could enhance endurance and concentration.

Comparatively, research by Kennedy and Bonetti (2019) demonstrated a negative correlation between cannabis use and psychomotor performance, reinforcing the consensus that the substance undermines coordination and reaction time. Collectively, these findings highlight the urgent need for integrated health education and medical interventions to address cannabis-related risks in sports environments.

METHODOLOGY

Research Design

This study adopted a descriptive survey research design. The design was considered appropriate because it enabled the researchers to gather detailed and factual information from athletes and coaches regarding cannabis use and its perceived influence on athletic performance. The descriptive survey approach allowed the collection of quantitative data that reflected participants' opinions, behaviors, and experiences, which were subsequently analyzed to draw inferences about the population.

Area of the Study

The study was conducted in selected tertiary institutions and sports associations across Delta and Edo States, Nigeria. These areas were chosen because they have a strong sports culture and a significant number of youth and professional athletes who participate in local and national

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competitions. The choice of these regions also reflects the growing concern among sports administrators and health educators regarding the prevalence of cannabis use among athletes and its implications for performance and health education.

Population of the Study

The population of this study comprised all registered athletes and sports coaches in the selected tertiary institutions, local government sports councils, and sports associations in Delta and Edo States. The target population included both male and female athletes actively engaged in track and field, football, basketball, and other competitive sports. According to records from the respective sports councils, the estimated population was approximately 1,200 individuals.

Sample and Sampling Technique

A total of 300 respondents were selected as the study sample using a stratified random sampling technique. The population was stratified based on gender, sports type, and institution or association. From each stratum, a proportionate number of respondents were randomly chosen to ensure representativeness. This method was adopted to minimize sampling bias and to guarantee that both male and female athletes, as well as various sporting disciplines, were adequately represented.

The sample distribution was as follows:

- 200 athletes (male and female)
- 100 sports coaches and physical educators

Instrument for Data Collection

The primary instrument used for data collection was a structured questionnaire titled “**Cannabis Use and Athletic Performance Questionnaire (CUAPQ)**”. The instrument was divided into four sections:

- **Section A:** Demographic information (age, gender, sport, years of experience).
- **Section B:** Frequency and patterns of cannabis use among athletes.
- **Section C:** Perceived effects of cannabis use on physical performance, recovery, and motivation.
- **Section D:** Health and educational implications as perceived by respondents.

The questionnaire items were designed using a four-point Likert scale, ranging from Strongly Agree (4) to Strongly Disagree (1), to allow respondents to express the degree of their agreement or disagreement with the given statements.

Validation of the Instrument

The instrument was subjected to content and face validation by three experts: one in Health Education, one in Human Kinetics, and one in Measurement and Evaluation from the University of Delta, Agbor. The experts reviewed the questionnaire for clarity, relevance, structure, and alignment with the study objectives. Based on their suggestions, several items were modified for improved validity before the final version was administered.

Reliability of the Instrument

To determine the reliability of the questionnaire, a pilot test was conducted using 30 athletes and coaches from institutions not included in the main study. The Cronbach’s Alpha reliability coefficient was calculated using the pilot data, yielding a coefficient of 0.86, indicating high internal consistency and reliability of the instrument.

Method of Data Collection

After obtaining ethical clearance and permission from relevant sports councils and institutional authorities, the researchers personally administered the questionnaires with the assistance of trained research aides. The purpose of the study was clearly explained to the participants, and confidentiality was assured. The questionnaires were distributed and retrieved within a two-week period. The high retrieval rate of approximately 93% was achieved due to the researcher’s direct involvement in the data collection process.

Method of Data Analysis

Data collected were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics such as frequency counts, percentages, mean scores, and standard deviations were used to summarize the data and answer the research questions. To test the hypotheses, t-test and Analysis of Variance (ANOVA) were employed at a 0.05 level of significance. These methods were appropriate because they allowed for comparison between groups and assessment of significant differences among variables related to cannabis use and athletic performance.

Ethical Considerations

Ethical standards were strictly adhered to in this study. Informed consent was obtained from all participants before data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The study also ensured that no participant was coerced or harmed, and that data collected were used solely for academic purposes. All ethical guidelines stipulated by the University of Delta, Agbor, were followed throughout the research process.

RESULT

This section presents the data collected from respondents on Cannabis Use and Athletic Performance: Implications for Health Education and Sports Medicine. The analysis was carried out in line with the research questions and hypotheses formulated in introduction. The data were organized, summarized, and analyzed using descriptive and inferential statistics, including frequency counts, percentages, means, standard deviations, t-test, and Analysis of Variance (ANOVA). A total of 300 questionnaires were distributed to athletes and coaches, out of which 280 were correctly completed and returned, representing a 93% response rate.

Presentation of Demographic Information of Respondents

Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	180	64.3
	Female	100	35.7
Total		280	100
Age Range (Years)	18–22	85	30.4
	23–27	105	37.5
	28–32	60	21.4
	33 and above	30	10.7
Sports Type	Track and Field	90	32.1
	Football	70	25.0
	Basketball	60	21.4
	Others	60	21.4

Source: **Field Survey, 2025**

Table 1 shows that 64.3% of respondents were male, while 35.7% were female. The majority of the respondents (37.5%) were between 23–27 years old, with track and field athletes forming the largest sports category.

Research Question One: What is the prevalence of cannabis use among athletes in the study area?

Response Options	Frequency (f)	Percentage (%)
Very High	50	17.9
High	110	39.3
Moderate	80	28.6
Low	40	14.2
Total	280	100

Mean = 2.61; SD = 0.78**Interpretation:**

Table 2 indicates that 57.2% of respondents rated the prevalence of cannabis use among athletes as *high* or *very high*. The mean score (2.61) suggests a moderate-to-high level of cannabis use, implying that substance use is fairly common among athletes in the region.

Research Question Two: What are the perceived effects of cannabis use on athletic performance?

Items	SA (4)	A (3)	D (2)	SD (1)	Mean	Decision
Cannabis improves focus and relaxation before competition.	80	110	60	30	2.86	Agree
Cannabis reduces pain perception during exercise.	90	100	60	30	2.93	Agree
Cannabis use leads to slower reaction time and poor coordination.	120	100	40	20	3.14	Agree
Cannabis use affects recovery and endurance negatively.	130	90	40	20	3.18	Agree
Cannabis use enhances motivation and courage.	60	90	80	50	2.46	Disagree

Grand Mean =**2.91****Interpretation:**

The grand mean of 2.91 indicates that respondents generally agreed that cannabis use has mixed effects on performance—while some perceive benefits such as pain reduction and relaxation, others acknowledge negative outcomes such as poor coordination and reduced endurance.

Research Question Three: What are the health and educational implications of cannabis use among athletes?

Items	SA (4)	A (3)	D (2)	SD (1)	Mean	Decision
Cannabis use increases the risk of respiratory and cardiovascular diseases.	140	100	30	10	3.32	Agree
Cannabis addiction disrupts athletes' academic performance.	120	110	40	10	3.21	Agree
Continuous cannabis use leads to psychological dependence.	130	100	40	10	3.25	Agree
Health education can reduce cannabis use among athletes.	140	110	20	10	3.36	Agree
Cannabis awareness programs should be included in sports medicine education.	150	100	20	10	3.39	Agree

Grand Mean =**3.31****Interpretation:**

With a grand mean of 3.31, respondents strongly agreed that cannabis use poses serious health risks and negatively impacts academic performance. The findings highlight the importance of health education and awareness campaigns as preventive strategies.

Test of Hypotheses

Hypothesis One: There is no significant difference between male and female athletes in their perception of the effects of cannabis use on athletic performance.

Gender	N	Mean	SD	t-cal	t-crit (0.05)	Decision
Male	180	2.94	0.81	1.76	1.96	Not Significant
Female	100	2.83	0.77			

Interpretation:

Since t-calculated (1.76) < t-critical (1.96) at 0.05 significance level, the null hypothesis is accepted. This implies that both male and female athletes share similar perceptions regarding the effects of cannabis use on performance.

Hypothesis Two: There is no significant difference among athletes from different sports in their perception of the performance effects of cannabis use.

Source of Variation	Sum of Squares	df	Mean Square	F-cal	F-crit (0.05)	Decision
Between Groups	1.82	3	0.61	2.14	2.68	Not Significant
Within Groups	78.60	276	0.28			
Total	80.42	279				

Interpretation:

Since F-calculated (2.14) < F-critical (2.68) at 0.05 level, the null hypothesis is accepted. This indicates that athletes across different sports categories do not significantly differ in their perception of cannabis use effects.

SUMMARY OF FINDINGS

1. The prevalence of cannabis use among athletes in Delta and Edo States is moderate to high, suggesting its widespread acceptance among certain groups.
2. Respondents perceived both positive and negative effects of cannabis use, though the majority acknowledged its detrimental impact on coordination and endurance.
3. Cannabis use has significant health and educational implications, including risk of addiction, disease, and poor academic performance.
4. There was no significant difference in perception between male and female athletes or across sports disciplines.

Summary

This study investigated Cannabis Use and Athletic Performance: Implications for Health Education and Sports Medicine in selected sports institutions and associations across Delta and Edo States, Nigeria. The major focus was to determine the prevalence of cannabis use among athletes, assess its perceived effects on performance, and examine the associated health and educational implications.

A descriptive survey research design was adopted, and a total of 300 questionnaires were distributed to athletes and coaches, of which 280 were correctly completed and returned. The data were analyzed using descriptive statistics (mean, standard deviation, and percentages) and inferential statistics (*t*-test and ANOVA) to test the hypotheses at a 0.05 level of significance.

The findings of the study revealed that the prevalence of cannabis use among athletes was moderate to high, indicating a growing concern about substance use in sports environments. Although some athletes believed cannabis helped relieve stress, pain, and anxiety before competition, the majority acknowledged its negative impact on coordination, endurance, and cognitive function. The study also found that cannabis use poses significant health and educational challenges, including the risk of addiction, impaired academic performance, and increased vulnerability to cardiovascular and psychological disorders.

Furthermore, no significant difference was observed between male and female athletes or across various sports categories in their perceptions of cannabis use and its effects on performance. This suggests that the issue of cannabis use cuts across gender and sporting disciplines.

CONCLUSION

Based on the findings, the study concludes that cannabis use among athletes is a prevalent behavioral concern with far-reaching implications for health education and sports medicine. While some athletes may perceive temporary performance benefits, the overall physiological, cognitive, and health-related consequences are detrimental to athletic performance and long-term well-being.

The study also concludes that education and awareness play a pivotal role in reducing substance use among athletes. Effective health education campaigns and sports medicine interventions can help modify misconceptions surrounding cannabis use and enhance the promotion of healthy lifestyles in sports communities.

In summary, cannabis use undermines athletes' physical efficiency, mental alertness, and moral discipline. Thus, a coordinated effort between coaches, health educators, and policymakers is essential to curb the trend through prevention, counseling, and rehabilitation strategies.

RECOMMENDATIONS

In light of the findings and conclusions, the following recommendations are made:

1. Sports authorities and educational institutions should integrate comprehensive health education programs focusing on the dangers of drug and cannabis use into athlete training curricula and community sports initiatives.
2. Regular seminars, workshops, and media campaigns should be organized by sports ministries and health educators to dispel myths about cannabis improving athletic performance and to promote substance-free sports culture.
3. Counseling units should be established within sports institutions to provide psychological support and rehabilitation services for athletes struggling with drug use or dependence.
4. The government, in collaboration with the National Drug Law Enforcement Agency (NDLEA) and sports governing bodies, should strengthen anti-doping policies, ensure strict enforcement of drug testing, and penalize offenders appropriately.

5. Coaches and sports educators should receive periodic training on drug education and preventive counseling to enable them to identify and manage early signs of drug abuse among athletes.
6. Sports medicine programs should include specialized modules on substance abuse, its physiological impacts, and intervention strategies, preparing future professionals to address the issue holistically.
7. Future studies should explore the psychosocial and cultural factors influencing cannabis use among athletes and evaluate the effectiveness of preventive health education programs in mitigating the problem.

Contribution to Knowledge

This study contributes to knowledge by highlighting the link between cannabis use and athletic performance from both health education and sports medicine perspectives. It provides empirical evidence that can guide policymakers, educators, and sports administrators in designing targeted interventions to promote drug-free sports participation.

Suggestions for Further Studies

1. A longitudinal study should be conducted to assess the long-term effects of cannabis use on athletes' physiological and psychological health.
2. Future researchers should investigate the role of peer influence, social media, and socio-economic factors in promoting cannabis use among athletes.
3. A comparative study across states or regions could provide a broader understanding of cultural differences in cannabis use patterns and preventive measures.

Acknowledgement: I would like to express my sincere appreciation to all those who contributed to the completion of this paper. Special thanks to the co-author, whose insightful guidance and expertise greatly enriched the content as well as his invaluable support and encouragement throughout the research process. His contributions have been instrumental in shaping the outcome of this work.

Declaration

Conflict of interest: Authors declares no conflict of interest.

Funding: Not applicable (N/A).

Authors contributions: Both authors have contributed equally from start till end including write-up, literature review as well as finalized comments.

Data availability statement: Data supporting this manuscript will be provided upon reasonable request from the corresponding author.

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