Advances in Social Sciences Research Journal – Vol. 12, No. 01
Publication Date: January 25, 2025
DOI:10.14738/assrj.1201.18241.
Coutinho, L. F. D., Nascimento-Salgado, L. V., Monteiro-Bontempo, V., & Martins-Chaves, R. R. (2025). Stigma, Taboo, and Public Health: A Sociological and Bioecological Approach to the Use of Performance and Image-Enhancing Drugs. Advances in Social Sciences Research Journal, 12(01). 264-272.

Stigma, Taboo, and Public Health: A Sociological and Bioecological Approach to the Use of Performance and Image-Enhancing Drugs

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ABSTRACT

Background: This article provides an interdisciplinary review of performance-enhancing and image-enhancing drugs (PEDs) through sociological and bioecological lenses. The analysis reveals a growing and complex trend of PED use among recreational users. Methods: Utilizing Bronfenbrenner's bioecological theory along with covering books, reports, anti-doping notes, observational studies and systematic reviews, this review explores how different pressures influence PED use. Goffman's concept of stigma highlights the marginalization PED users encounter, as they are often associated with cheating or health risks. Findings: The article examines how different systems spread unrealistic body ideals, which intensifies pressures on individuals to normalize PED use. The western cultural dynamic connects PED use to both physical aspirations and deeper self-worth issues related to body image and it is the duty of healthcare professionals not only to refuse such prescriptions but also to actively engage in prevention and public awareness efforts regarding the dangers of PEDs. Interpretation: Emphasizing the need for an empathetic yet firm medical approach, the article advocates for healthcare professionals to engage openly with PED users to foster supportive dialogues with. Such engagement is crucial for effective public health interventions that can address both the physical and psychological risks of PED use, ultimately contributing to a more health-centered societal perspective on performance and body image. In conclusion, this article emphasizes the urgent need to reframe the

conversation around PEDs, recognizing their complex social underpinnings to better approach affected individuals.

Keywords: Behavioral Sciences, Performance-Enhancing Substances, Public Health

INTRODUCTION

Performance-enhancing drugs (PEDs) include various compounds used to boost muscle strength, enhance bone density, and increase red blood cell production, contributing to anabolism while reducing catabolism.[1] While doping was initially associated with elite sports, its prevalence has notably risen among non-elite athletes, where recreational users seek aesthetic gains or recreational use.[2] Today, the use of PEDs, such as anabolic steroids (AAS), has become an epidemic and despite a significant amount of scientific evidence, the majority of the public, as well as the medical community, continues to mistakenly view it as an isolated issue.[2]

Despite AAS being the most notable type of PEDs, the World Anti-Doping Agency's (WADA) Prohibited List 2024, highlights a wide range of performance-enhancing substances with diverse pharmacological properties, including aromatase inhibitors, selective androgen receptor modulators, growth hormone secretagogues, hormonal precursors, stimulants and diuretics.[3] The use of performance-enhancing drugs (PEDs) without legitimate medical indication poses a serious health risk and has no ethical support in medical practice. The prescription of these substances for aesthetic or physical enhancement purposes is prohibited worldwide, as it exposes patients to severe adverse effects. Therefore, it is the duty of healthcare professionals not only to refuse such prescriptions but also to actively engage in prevention and awareness efforts regarding the harms caused by the indiscriminate and amatory use of PEDs.

Estimating PEDs prevalence is challenging due to the reliance on laboratory tests targeting competitive athletes, which limits general population insights. Also, variability in data coverage also impacts prevalence estimates, as studies rarely address compounds. Nevertheless, a meta-analysis study identified a 3·3% steroid global prevalence, with rates higher in men (6·4%) than women (1·6%), showing significant gender heterogeneity.[4] It is further estimated that among Americans currently aged 13–50 years, 2·9–4·0 million have used AAS and 1 million may have experienced AAS dependence.[5]

In Brazil, AAS use varies widely and highly heterogeneously across demographic regions, with a general prevalence 4%, and rates of 18·4% among recreational athletes.[6] Both countries reflect similar challenges in understanding PED use, as traditional survey methods may underreport due to social stigma or legal concerns. Studies recommend wastewater analysis as an alternative, providing more objective, comprehensive population data.[7]

Therefore, this study approaches PED use from an interdisciplinary perspective, incorporating social sciences frameworks to examine how stigma and health outcomes intersect in the current society. Theories by Erving Goffman and Urie Bronfenbrenner provide insight into how societal pressures and personal environments shape PED use and its consequences. Addressing this issue through equitable public health strategies aligns with Article 25 of the Universal Declaration of Human Rights, which emphasizes the right to health. Such strategies must also

consider sociocultural factors and community involvement, which is essential for developing a healthcare system that meets the needs of every population.

BRONFENBRENNER'S BIOECOLOGICAL THEORY ON WHY INDIVIDUALS TURNS TO PEDs

Bronfenbrenner's bioecological theory provides a framework to analyze the mindset behind doping in Western society, linking cultural patterns and social pressures that drive individuals to pursue "ideal" bodies artificially, whether for recreation or sports. Though traditionally applied to children and adolescents, the theory's focus on system interactions is relevant to other age groups. Bronfenbrenner highlights the importance of environmental contexts on human development, organized into systemic levels: microsystem, mesosystem, exosystem, and macrosystem.[8]

The Microsystem

The microsystem comprises direct relationships within an individual's daily environment—family, friends, and colleagues—that directly impact behavior.[8] In PED use, relationships within the microsystem can strongly influence users' decisions, as pressure from family and friends can shape perceptions of body image, strength, and success. Families emphasizing physical appearance or athletic performance may encourage PED use to meet these ideals, which can compromise young people's well-being and lead to risky behaviors.[9]

Parental pressure is often significant, with some viewing their children's achievements as personal validations, inadvertently pushing them toward PEDs. Peer influence also plays a role; approximately 17% of adolescent steroid users cite peer pressure as a primary factor. This peer influence, especially in sports and bodybuilding, creates a cycle where acceptance is linked to conformity with group norms that support PED use.[10]

Despite adhering to rigorous training regimens and nutritional protocols, many young people eventually abandon these plans due to frustration. Observing peers who achieve superior physiques through PEDs, they mistakenly attribute their own struggles to genetic limitations. Consequently, they perceive PED use as the sole viable option to attain comparable results, thereby justifying its use to level the competitive field.

The Mesosystem

The mesosystem encompasses interactions between various microsystems, such as family and peer influences, which do not operate in isolation but are interdependent.[8] For instance, if a family highly values sports success and peers prioritize physical appearance, adolescents may feel pressured to achieve in both areas. This combined influence can drive them to PEDs to satisfy both family and peer expectations.[10] For example, a teenager whose family celebrates athletic accomplishments and whose peers praise physical appearance may feel doubly compelled to use PEDs for social approval.

Scientific studies indicate that appearance-based compliments in social and professional settings increase anxiety, reinforcing self-worth tied to appearance rather than competence. This pressure can lead individuals to seek validation in physical attributes rather than personal achievements,[11] a pattern evident among youth who prioritize body image and performance due to social influences from family and friends.

The Exosystem

The exosystem includes larger contexts indirectly affecting individuals, such as government policies or media influence.[8] In this context, these broader structures shape PED use through factors like accessibility, legality, and media portrayals of "ideal" bodies. Governmental control over PEDs is generally less than narcotics regulation, with the vast majority of the substances obtainable through the black market or online.[12]

Social media also plays a critical role, with Statista reporting a global daily average of 143 minutes on social networks in 2023,[13] which intensifies exposure to body standards promoted by digital influencers and media platforms. Studies reveal that men exposed to shirtless influencers experience reduced body satisfaction, reinforcing once again the perception that PEDs are essential for achieving these aesthetic standards.[14] Consequently, frequent social media exposure will foster body dissatisfaction, encouraging PED use as a less demanding pathway to align with these pervasive cultural ideals of athleticism and leanness.

The Macrosystem

The macrosystem encompasses cultural values, norms, and belief systems that indirectly shape all other systems, influencing individual expectations and behaviors.[8] The Western cultural ideal of hyper-athletic, muscular bodies, originating in the 1980s, remains significant in shaping societal values around strength, masculinity, and physical success. At that time, PEDs, specifically anabolic steroids, became popular beyond elite athletes, partly due to manuals like Dan Duchaine's Underground Steroid Handbook, which made steroids accessible to those aiming to enhance their physique. By the 1990s, most AAS users were young men inspired by media-driven body ideals, with no involvement in competitive sports.[12]

In the Americas, especially in the U.S. and Brazil, muscular male bodies are highly valued, reinforcing social pressures from the macrosystem on individual choices. Brands like Abercrombie & Fitch in the 1990s to 2000s promoted athletic, lean bodies as symbols of success, creating an aspirational image linked to social capital and desirability. Numerous other brands contribute to this pressure, portraying young, athletic, "perfect" bodies as aspirational and suggesting this model offers status and even happiness.[15]

This unattainable beauty standard affects young people's self-esteem, leading them to believe their worth is tied to physical appearance. For over three decades, physical appearance has been perceived not only as a personal trait but as a form of social capital, motivating individuals to use PEDs to attain this "ideal" body. The pressure to achieve an athletic, media-promoted image supports PED use as a logical solution to meet societal expectations of attractiveness, masculinity, and success, particularly in Western society where body ideals are highly emphasized.[12]

STIGMAS AND TABOO: WHAT LIES BEHIND THE DENIAL OF PED USE

The term "stigma" was originally used by the Greeks to denote bodily marks symbolizing something negative or extraordinary about a person's moral behavior.[16] Centuries later, Canadian sociologist Erving Goffman's 1963 work, Stigma: Notes on the Management of Spoiled Identity, solidified his reputation as a leading microsociologist and deeply influenced fields like social and health sciences. His concept of stigma plays a significant role in this study and helps explain societal attitudes toward the performance-enhancing drugs use.

URL: http://dx.doi.org/10.14738/assrj.1201.18241

Goffman examined how stigmatized individuals manage their identities, often by controlling the visibility of their stigmas. This "information control" is crucial, as it directly impacts how these individuals are perceived and treated in social contexts. PED users similarly manipulate how they present themselves in public, concealing drug use and instead showcasing their "perfect body" as a symbol of natural achievement.

One of the strategies Goffman identified is "covering up," whereby individuals try to prevent their stigma from becoming the focal point, thereby avoiding negative judgments.[16] In the case of PED users, this might involve downplaying the substances' role, attributing their physique to hard work, talent, or genetics. Another tactic, "concealment," involves actively hiding the stigma to avoid exposure.[16] Among PED users, this may manifest in their fierce opposition to questions about drug use, with non-official doping tests serving as a defense mechanism.

Goffman also discusses how stigmatized individuals use information control techniques to navigate stigmatizing situations, often by concealing culturally recognizable signs of their stigma. He describes narcotics users in New Orleans, for example, who began searching for injection sites outside the arm area when police started checking arms for needle marks:

> *"The police began stopping addicts on the street to check for injection marks on their arms. If they found any, they pressured the addict to sign a statement admitting their condition… From that point on, addicts began searching for veins in other parts of the body, outside the arm area."* [16]

For PED users, this could mean hiding aspects of their background or selectively revealing drug use after retiring or during severe health issues, moments when public sympathy may mitigate stigmatization.

The societal taboo surrounding PEDs is further explored in a UK Anti-Doping (UKAD) webinar titled Is it Taboo? Coaches, Athletes, and Anti-Doping. Here, it is noted that PED use remains a sensitive issue, as addressing it risks reputational harm and other adverse consequences. This culture of silence discourages open discussions on doping, sustaining stigma as a tool for social control.[17] Fear of moral judgment or social sanctions perpetuates this taboo across generations, a cycle also examined through Bronfenbrenner's bioecological theory.

This persistent taboo reflects a broader social dynamic where stigma marginalizes individuals involved in doping, affecting social interactions and creating a "cycle of spoiled identity".[16] Consequently, the stigma of PED use isn't merely an individual matter but a social process shaping identities and reinforcing power structures tied to the idealized body.

When those in athletic communities—coaches, doctors, and other professionals—avoid discussing doping, they reproduce a social reality that minimizes PED use to isolated risk behaviors. This silence creates a subculture where PED use is normalized, with potential health risks largely ignored. Society thus draws a line between the "normal"—those who follow the ethical standards of sports—and the "deviant"—those who use banned substances. This division perpetuates the impression that even mentioning PEDs leads to stigmatization, reinforcing the silence around the topic.

This "culture of silence" functions as a self-sustaining cycle: stigma makes doping a taboo topic, and this taboo, in turn, reinforces the stigma. Together, they prevent the stigmatized and society at large from advancing a comprehensive understanding of PED use as a complex health issue. Such barriers are even more apparent through Bronfenbrenner's bioecological lens, which highlights how sociocultural settings shape behaviors and beliefs across generations. The fear of exclusion and stigma are reproduced across social strata, creating conformity through omission and hesitation.

This silence strategy also obstructs progress in public health, as the absence of open dialogue consolidates inequality and excludes these practices from critique and regulation.[18] Stigma and the fear of exclusion restrict health communication, preventing widespread knowledge about doping's risks. This creates social conformity that, in effect, validates the pursuit of artificial physical enhancement, contributing to an escalating public health issue as more individuals will engage in PED use in the following years if the situation continues with the current approach and social norms.

Moreover, this silence hinders the development of public policies and educational efforts that could raise awareness and promote safer health practices.[18,19]

In this context, doping exemplifies Goffman's concept, where stigma acts as a social control mechanism, regulating behavior and enforcing the status quo. The silence surrounding PEDs maintains a rigid divide between what is considered "normal" and "abnormal," stifling open discussion and enabling the status quo. Breaking this cycle is critical for shifting doping from a stigmatized topic to one of public health and mutual responsibility, potentially influencing societal attitudes and policies for future generations.

RISKS TO INDIVIDUALS: THE SOCIAL ROLE OF MEDICINE

Addressing the increasing use of performance and image-enhancing drugs (PEDs) requires raising public awareness and expanding research on their long-term effects. Healthcare professionals play a critical role in this process, needing to foster open communication with patients about the real risks involved.

PED use has severe health consequences, which vary by individual but can lead to disability and even death. Effects range from acne and baldness to testicular atrophy and "Roid Rage," a term for aggression linked to steroid use. Other risks include hypertension, diabetes, cardiovascular diseases, liver disease, and psychiatric disorders.[20]

A comprehensive understanding of PEDs aids in recognizing their dangers, as addressing PED use is not just a matter of sports ethics but also social responsibility. The normalization of PEDs in recreational contexts poses ethical concerns and sends ambiguous messages about health and performance boundaries. Compounding this issue, designer steroids—chemically modified to evade anti-doping tests—lack safety data and are often manufactured clandestinely, putting users at additional risk.[21]

From a social science perspective, medicine's role in addressing PED use should go beyond punitive measures. Health professionals must adopt a non-judgmental approach, recognizing that substance use often stems from biological, psychological, and social influences. This

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approach discourages stigma and promotes shared responsibility, allowing healthcare providers to guide patients realistically about PED use, addressing individual needs while respecting health limits. Professionals must be prepared for open, informed discussions that highlight real risks, helping patients make safer, more informed choices.[20]

A CALL TO ACTION

Unlike well-documented public health crises, PED use remains a taboo topic, hindered by secrecy and a lack of comprehensive data.[12] Using Bronfenbrenner's and Goffman's theories, it's plausible that PED use isn't just a personal choice but is fueled by social and environmental factors. Consequently, expecting immediate action is unreasonable. However, governments and public health organizations must work collaboratively to implement targeted, region-specific strategies across the world nos primarily focusing only on elite competitions. These include educational and law enforcement campaigns that respect the heterogeneous distribution of the epidemiological scenario of PED use, challenge unattainable body ideals and enforce stricter regulations. However, governmental actions to combat the trade and circulation of PEDs may present significant challenges, requiring creativity and innovation. Understanding the various types of substances could assist regulatory agencies in cataloging and identifying, for instance, fitness influencers on the internet who may be involved in the online black market.

Regardless in all cases it must be considered addressing the root causes of PED use, such as societal pressure and misinformation, while prioritizing empathy and fostering honest conversations.[22]

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Leonardo Vaz do Nascimento Salgado - Data curation and editing
Valentina Monteiro Bomtempo - Visualization and data curation
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The Use of Al and Al-assisted Technologies Statement:

Al and Al-assisted technologies were employed in the refinement of this manuscript to enhance clarity and perfect use of the English language.

Declaration of Interests:

We, the authors, declare no competing interests. We also confirm that the material is original, unpublished, and exclusively submitted to the present journal.

Funding: No external funding was received for this study.

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