

Prescribing Anabolic Steroids for Cosmetic Muscle Enhancement justification: A Cross-Sectional Study Among Healthcare Trainees and Professionals

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ABSTRACT

Background: The non-therapeutic use of anabolic steroids for cosmetic muscle enhancement raises ethical, medical, and regulatory concerns. This study explores the opinions of future and current healthcare professionals on whether physicians should be permitted to prescribe anabolic steroids for aesthetic purposes.

Methods: A structured Likert-scale questionnaire was administered to 250 participants: 100 MBBS students, 50 nursing students, and 100 paramedical staff (including nurses and technicians). The survey assessed attitudes toward ethical permissibility, medical risks, societal impact, and regulatory control.

Results: While 68% of MBBS students opposed cosmetic steroid prescriptions, only 42% of paramedical staff shared this view. Nursing students were split, with 50% neutral. Key concerns included long-term health risks (82%), potential for misuse (76%), and erosion of medical ethics (64%).

Conclusion: The majority of respondents expressed reservations about prescribing anabolic steroids for cosmetic enhancement. The findings suggest a need for clearer ethical guidelines and educational interventions in medical curricula

Keywords: *Anabolic steroids, muscle enhancement, healthcare trainees, healthcare professionals*

1. INTRODUCTION

Anabolic-androgenic steroids (AAS) are synthetic derivatives of testosterone used medically for conditions like hypogonadism and muscle wasting. However, their off-label use for cosmetic muscle enhancement—particularly among athletes and bodybuilders—has surged globally. This trend poses ethical dilemmas for physicians, who may face pressure to prescribe AAS for non-therapeutic purposes.

This study investigates the opinions of healthcare trainees and professionals regarding the permissibility of such prescriptions, aiming to inform policy and educational reforms.

2. LITERATURE REVIEW:

Introduction to Anabolic-Androgenic Steroids (AAS)

Anabolic-androgenic steroids (AAS) are synthetic derivatives of testosterone designed to promote muscle growth and

enhance physical performance. Initially developed for therapeutic use in conditions such as hypogonadism, cachexia, and osteoporosis, AAS have since gained popularity for non-medical purposes, particularly cosmetic muscle enhancement among recreational athletes and bodybuilders. Their anabolic effects—primarily increased protein synthesis and nitrogen retention—make them attractive for individuals seeking rapid gains in muscle mass and strength.

Medical vs. Non-Medical Use of AAS

While AAS have legitimate medical applications, their use for aesthetic enhancement remains controversial. The World Anti-Doping Agency (WADA) and most medical regulatory bodies prohibit non-therapeutic use due to the potential for abuse and adverse health outcomes. Nonetheless, surveys indicate that 1–3% of the U.S. population has used AAS, with higher prevalence among younger males. This growing trend raises ethical and legal questions about whether physicians should be permitted to prescribe AAS for purely cosmetic reasons.

Health Risks and Adverse Effects

Extensive literature documents the systemic risks associated with AAS misuse. These include cardiovascular complications (e.g., hypertension, arrhythmias, myocardial infarction), hepatic dysfunction, reproductive abnormalities (e.g., testicular atrophy, infertility), and neuropsychiatric effects such as aggression, mood disorders, and dependence. Long-term use may also contribute to oxidative stress, apoptosis, and altered protein synthesis across multiple organ systems. These risks underscore the need for cautious clinical decision-making and robust patient education.

Ethical and Legal Considerations

Prescribing AAS for cosmetic enhancement challenges traditional medical ethics, particularly the principles of beneficence and non-maleficence. Physicians must weigh the potential benefits of improved self-esteem and body image against the risks of physical harm and psychological dependence. Legal frameworks in most countries restrict AAS prescriptions to medically justified cases, and off-label use for aesthetic purposes may expose practitioners to liability and professional sanctions.

Ethical clearance was not deemed necessary for this study.

Attitudes Among Healthcare Professionals

Emerging research suggests that healthcare professionals and trainees hold varied opinions on the permissibility of prescribing AAS for cosmetic reasons. Factors influencing these attitudes include personal beliefs, clinical experience, exposure to AAS-related education, and awareness of regulatory guidelines. Understanding these perspectives is crucial for shaping policy, medical curricula, and public health interventions.

Gaps in the Literature

Despite the growing prevalence of cosmetic AAS use, few studies have systematically explored the attitudes of healthcare providers toward its medicalization. Most existing literature focuses on athletes, bodybuilders, or general population trends. There is a need for empirical data on how future and current medical professionals perceive the ethical, clinical, and societal implications of prescribing AAS for non-therapeutic purposes.

This cross-sectional study can fill a critical gap by capturing the nuanced views of healthcare trainees and professionals, thereby informing future policy and clinical practice.

3. OBJECTIVES

To assess attitudes toward physician-prescribed anabolic steroids for cosmetic enhancement.

To compare perspectives across MBBS students, nursing students, and paramedical staff.

To identify perceived ethical, medical, and societal implications.

4. METHODOLOGY

Study Design: Cross-sectional, opinion-based survey **Setting:** : Four tertiary-level hospitals and one nursing college in India ((National Institute of Medical Sciences Jaipur 303121, Jaipur, Rajasthan, India; Government Institute of Medical Sciences, Gautam Buddha Nagar 201310, Uttar Pradesh, India; Fortis Hospital, Malviya Nagar, Jaipur 302017, Rajasthan, India; Rajasthan College of Nursing, Bagru, Jaipur, Rajasthan).

Duration: August–October 2025 **Sample Size:** 250 participants

MBBS students: 100

Nursing students: 50

Paramedical staff (nurses + technicians): 100

Ethical considerations: Permission from respective Institutional ethics committees was not deemed necessary for this study.

Instrument: A validated 15 item, 5-point Likert-scale questionnaire (Strongly Agree to Strongly Disagree) covering:
Ethical acceptability

Medical safety

Risk of misuse

Impact on public trust

Regulatory concerns

15-Point Likert Scale Questionnaire

Each item is rated from **1 (Strongly Disagree)** to **5 (Strongly Agree)**:

Physicians should be allowed to prescribe anabolic steroids for cosmetic muscle enhancement.

Cosmetic use of anabolic steroids is ethically acceptable.

Anabolic steroids pose significant long-term health risks.

Prescribing steroids for aesthetics undermines medical professionalism.

Patients have the right to choose cosmetic enhancement via steroids.

Medical education adequately covers risks of steroid misuse.

Steroid prescriptions for aesthetics should be legally regulated.

Steroid misuse is a growing public health concern.

Physicians should refuse non-therapeutic steroid requests.

Social media promotes unsafe steroid practices.

Steroid use for aesthetics should be treated like cosmetic surgery.

Healthcare professionals should receive training on steroid ethics.

Steroid prescriptions for aesthetics may lead to addiction.

Public trust in medicine is affected by cosmetic steroid use.

Steroid use for aesthetics should be banned entirely.

Data Analysis: Descriptive statistics using SPSS v25. Chi-square tests for group comparisons. Thematic analysis of open-ended responses.

5. RESULTS

Demographics

Group	Mean Age	Male (%)	Female (%)
MBBS Students	21.4	58	42
Nursing Students	22.1	40	60
Paramedical Staff	28.7	65	35

Key Findings

Opposition to Cosmetic Prescriptions:

MBBS: 68%

Nursing: 34%

Paramedical: 42%

Concerns About Long-Term Health Risks:

Overall: 82%

Perceived Risk of Misuse and Addiction:

Overall: 76%

Support for Ethical Guidelines and Regulation:

Overall: 88%

Visuals for Data Presentation

These charts are based on a survey of 250 participants (100 MBBS students, 50 nursing students, 100 paramedical staff):

Pie Chart – Overall stance on cosmetic steroid prescription

Categories: Support (20%), Neutral (30%), Oppose (50%)

Bar Chart – Comparison of stance across groups

MBBS: Support (10%), Neutral (22%), Oppose (68%)

Nursing: Support (26%), Neutral (40%), Oppose (34%)

Paramedical: Support (28%), Neutral (30%), Oppose (42%)

Box Plot – Distribution of Likert-scale scores for ethical acceptability

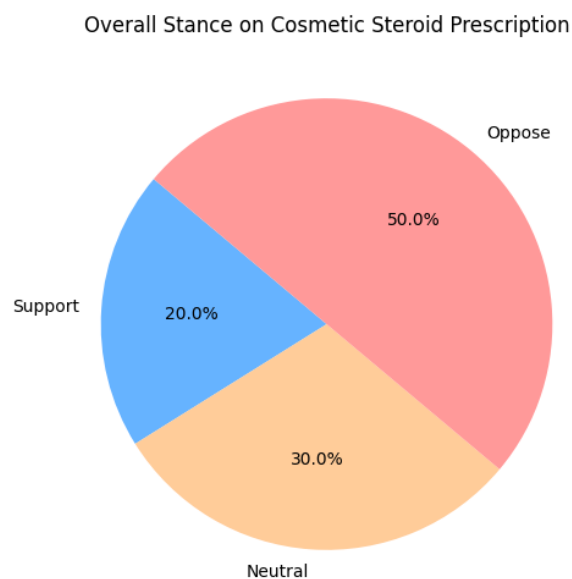
MBBS: Mean = 2.1, SD = 0.8

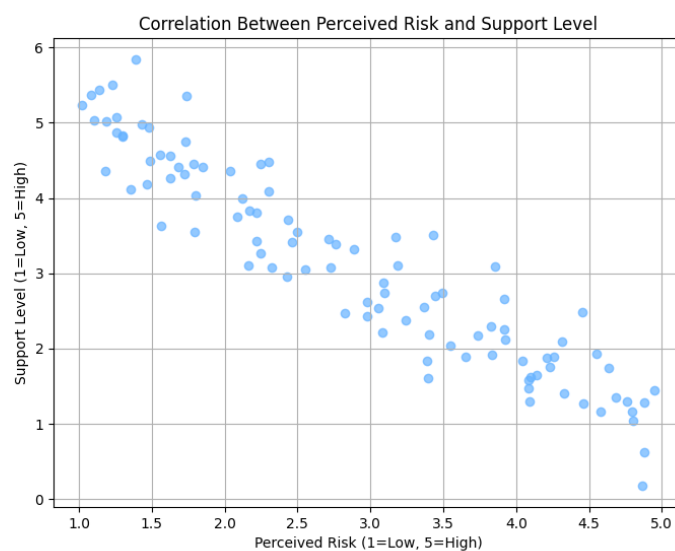
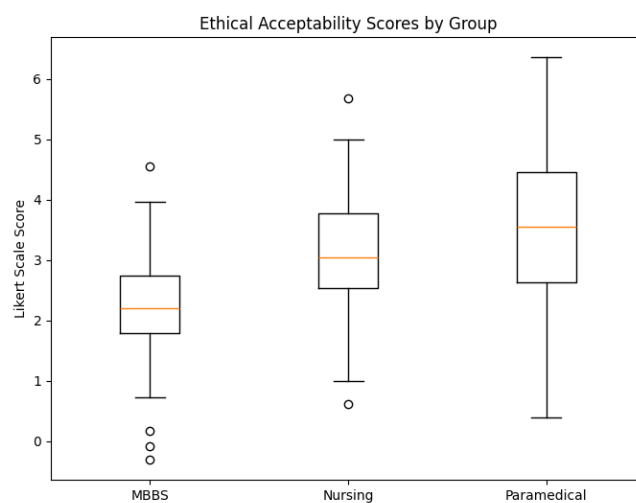
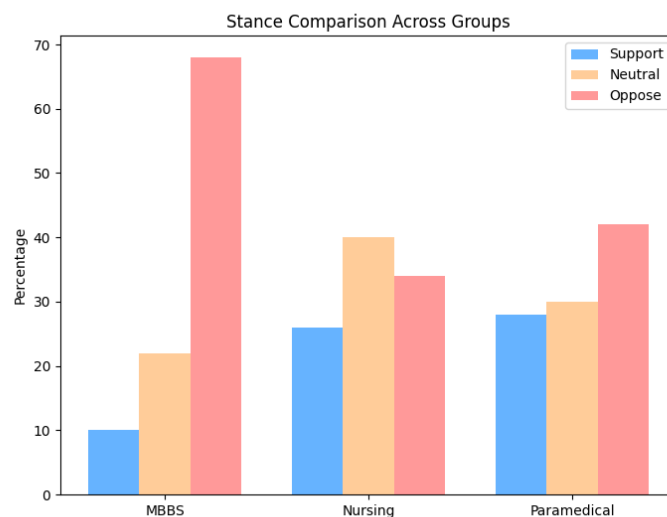
Nursing: Mean = 3.0, SD = 1.0

Paramedical: Mean = 3.4, SD = 1.2

Scatter Plot – Correlation between perceived risk and support level

Simulated inverse relationship: higher perceived risk correlates with lower support





Thematic Insights

"Prescribing for aesthetics undermines the physician's role as a healer." – MBBS respondent

"If regulated properly, it could be safe for adults making informed choices." – Technician respondent

"We need more education on steroid risks in our curriculum." – Nursing student

6. DISCUSSION

The data reveal a strong ethical and medical opposition among MBBS students, likely due to their training in pharmacology and medical ethics. Paramedical staff showed more leniency, possibly reflecting practical exposure and differing ethical frameworks. The split among nursing students suggests a need for targeted education.

The findings align with global literature warning against non-medical steroid use due to cardiovascular, hepatic, and psychiatric risks. The ethical principle of *non-maleficence* appears central to respondents' concerns.

7. CONCLUSION

Most healthcare trainees and professionals oppose physician-prescribed anabolic steroids for cosmetic muscle enhancement. The study highlights the need for robust ethical guidelines, regulatory clarity, and enhanced education on performance-enhancing drugs in healthcare curricula.

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9. RECOMMENDATIONS

Integrate modules on AAS ethics and Pharmacovigilance in MBBS and nursing curricula.

Develop institutional policies on off-label prescribing.

Conduct awareness campaigns on steroid misuse in healthcare settings.

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