AN ANALYSIS OF INDIAN WEIGHTLIFTERS USAGE OF DOPING AGENTS TO IMPROVE THEIR PERFORMANCE

[1]Arumugam, S., [2]Debdual Baidya & [3]Murugan, S
[1]Assistant Professor, [2]Associate Professor, & [3]Research Scholar
[1]Department of Physical Education and Sports, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu
[2]Regional College of Physical Education, Panisagar, North Tripura
[3]Department of Physical Education and Sports, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu

ABSTRACT

The purpose of this research is to analyse the doping practices used by Indian weightlifters to improve their performance during training and competition. The goal of the current research is to gather information on weightlifters that were found guilty of taking drugs at different national and international games that were prohibited by the International Olympic Committee, WADA, and NADA. The pertinent information on athletes who tested positive for doping by the IOC Medical Committee, NADA, or WADA was obtained from each organization's official website.

Keywords*: Anabolic-androgenic steroids, drugs, performance enhancement, NADA, WADA, IOC, doping, and prohibited substances.*

Introduction

Athletes are said to have used figs to increase their performance during the Ancient Olympics, which is when the earliest evidence of doping in sports originated. Many athletes are aware that methods are being developed to assist in halting the violence. Following the development of modern pharmacology in the 19th century, the first approach was experimenting with chemical mixes to increase vigour and overcome weariness.[1] There are several accounts of the lengths athletes would go to in order to succeed since this was not considered an illegal activity. Benefits came with drawbacks, and after many fatalities, a rule that forbade the use of performance-enhancing drugs was progressively established.

Human pituitary glands were used to extract growth hormone in the 1950s. Athletes started abusing it in the early 1980s, at least ten years before adult endocrinologists started using it medically, after its anabolic qualities were immediately discovered. Numerous well-known sportsmen have acknowledged using growth hormones. It has been difficult to identify misuse, and the absence of a suitable test has probably made it more common. Athletes, coaches, and spectators all benefit from competing clean since it not only upholds the integrity and fairness of sports, but it also helps safeguard players' reputations and, most importantly, your own health. You lose all of these things when you dope. As a clean athlete, you can take pride in your performances." [2]

In sports physiology nowadays, doping is a major issue on both a national and worldwide scale. This has to do with human morality and ethics as well as health, as the sincere camaraderie of sports rivalry is shaped by these values. The word "doping" was once restricted to blood doping, but doping has become so widespread that tests are no longer effective in identifying it. Doping is any action that results in the usage of certain medications in an attempt to increase one's endurance or performance in sports; this behaviour is considered unethical by the relevant organisations. These kinds of things may happen on a national and worldwide scale. The International Olympic Committee has ruled that this issue is prohibited (IOC).

Sportsmen often use drugs to improve their performance without worrying about getting caught, and they sometimes don't understand the long-term consequences these substances may have on their health. In addition to undermining sportsmanship, this exposes corruption and unethical athlete success. The winner is announced and the decision is made by the International Anti-Doping Agency. The use of chemicals and methods that are prohibited, as well as their combination, are referred to as doping. Nowadays, winning is important because it makes players richer and helps them develop in their jobs. Because of this, instructors place more emphasis on improving performance in order to win a competition rather than emphasising the importance of participating in a sport and the spirit of sportsmanship – enjoy ability. It is what matters that you compete with such zeal, regardless of whether you win or lose. Drug use is one of the most significant problems in the sports industry as athletes have used drugs in the past to increase their performance. Athletes with impairments even use performance-enhancing drugs. The sport is in jeopardy because of doping. It utterly destroys the discipline of free and fair tournaments by placing pressure on sportsmen worldwide. Young people look forward to athletes as role models, thus it will be detrimental if doping is only seen as a little problem. That's untrue if we're discussing sports authority since there's a chance that youth may participate.

Meaning of Doping: The practice of doping has existed for a while. The application of foreign chemicals to the body to improve athletic performance is known as doping. The use of drugs or other techniques to artificially enhance an athlete's performance during training or competition is known as doping. Doping is defined as breaking any of the code's anti-doping rules.

One or more of the following anti-doping rules are used to define doping. [4]

1. Inclusion of performance-enhancing substances in a sample.
2. Making use of an illegal substance or method.
3. After being notified, refusing to submit a sample.
4. Failure to provide information on where the formation is located.
5. Attempting to tamper with the doping control procedure.
6. Having a forbidden substance in your possession.
7. Prohibited substance trafficking.
8. Giving an athlete a forbidden substance or method to use.

List Of Prohibited Substances And Their Side Effects:[5]

Performance-enhancing drugs are banned from sports but this does not stop athletes from taking them.

1. **Anabolic Steroids:** When these are taken the body breaks them down into smaller molecules that can enter cells and bind to a structure called an androgen receptor. Normally testosterone binds to this but anabolic steroids can too. Once the androgen receptor is activated body starts to produce more proteins during the process of anabolism, and the cells in the skeletal muscles start to replicate and this means muscles will start to grow and become stronger. Anabolic steroids help athletes train harder and recover faster by shortening catabolism the process in which proteins are broken down into amino acids. However, not all effects of anabolic acids are positive, they can also cause acne, high blood pressure, and baldness in both men and women, and they can cause men's testicles to shrink, decrease sperm count and increase the risk for prostate cancer and women using these steroids can develop facial hair, a deepened voice and their periods may change or even completely stop.
2. **Creatine:** Creatine is a naturally occurring compound that aids in the energy release of your muscles. Creatine may have some athletic benefits, according to scientific evidence, byproducing small gains in short-term bursts of power. Creatine appears to aid

muscle production of adenosine triphosphate (ATP), a molecule that stores and transports energy in cells and is used for high-intensity activities like weightlifting and sprinting. The side effects of creatine are stomach and muscle cramps and weight gain.[6]

3. **Stimulants:** Stimulants are used by athletes to increase blood pressure to stimulate the brain and increase the heart rate, this increases endurance power, and reduces appetite and fatigue. Caffeine is a very common stimulant and is taken by athletes in large quantities in their energy drinks this makes them more alert and aggressive. The side effects of stimulants are heart diseases, dehydration, insomnia, addictions, and weight loss.
4. **Diuretics:** Athletes prefer diuretics as by this there is water loss from the body which reduces the weight. The side effects of diuretics are dehydration, dizziness, cramps, and sometimes death.
5. **Erythropoietin:** It is used to increase endurance as it increases the oxygen flow to muscles by increasing the production of red blood cells in the body in the 1990s eighteen cyclists died due to the erythropoietin. The side effects of erythropoietin are heart attacks and blockage of arteries of the lungs.
6. **Human Growth Hormone:** It increasesathletes' sprinting capacity by up to 4% and increases muscle growth as well. The side effects of taking human growth hormone are pain in joints, weakness of muscles, diabetes, hypertension, and eye problems.
7. **Blood doping:** The goal of blood doping is to increase the amount of oxygen-carrying red blood cells in the blood and this is usually done with either blood transfusions using own blood or by injecting with erythropoietin a molecule that stimulates the production of more red blood cells and the basic idea is that the more oxygen that can get to bodies muscles the more endurance The side effects of blood doping are heart diseases as it becomes difficult for the heart to pump blood due to the thickening of the blood and cerebral embolism.[7]
8. **Gene doping:** Body cells or genes are manipulated by the use of substances that improve performance. In 2003 WADA added gene-altering techniques to the list of prohibited substances however gene doping is not as popular as blood doping as it is costly and is risk- oriented too. The side effects of gene doping are increased blood viscosity, hypertension, abnormal vision, and headache. [8]

Anti-Doping Agencies

Doping control is an essential part of anti-doping programme to promote and protect sports' integrity and athletes' health.

World Anti-Doping Agency [9]

The World Anti-Doping Agency is a foundation initiated by the International Olympic Committee based in Canada to promote, coordinate and monitor the fight against doping in sports.

List of Prohibited Substances by WADA (2022) [10]

1. Peptide Hormones, Growth factors, related substances, and mimetics.
2. Beta-2 Agonists.
3. Hormone and Metabolic Modulators.
4. Diuretics and Masking agents.
5. Stimulants.
6. Glucocorticoids.

National Anti-Doping Agency [11]

The National Anti-Doping Agency is responsible for promoting, coordinating, and monitoring the doping control programme in sports in the country. Its vision is a dope-free sport in India. The functions of NADA are implementation of anti-doping rules, anti-

doping policies to be adopted and implemented increase testing, and promote research in education for anti-doping. NADA is responsible for conducting tests in competitions.

Anti-Doping rules of NADA

Anti-Doping rules placed a strict liability on athletes that they have to keep themselves up to date about substances that enter their bodies. However, many sportspersons in India are not educated enough to be aware of the substances that amount to doping.

Methodology

The present study was designed to collect data on the cases of Indian Weightlifters who have been found guilty of using abused drugs by the NADA, WADA. This paper gives a critical analysis regarding the comparison of drugs consumed by Indian weightlifters for Performance enhancement. The basic sources of data pertaining to players who have been declared positive in doping test by NADA testing laboratories, IOC Medical Committee, and WADA at Various National and International tournaments were collected from the official website of NADA and WADA.A list of Indian Weightlifters (10 Subjects) was randomly selected from the published data of NADA regarding athletes that tested positive for dope substances and sanctions imposed by the Anti-Doping Disciplinary Panel in the year 2016. [12]. This data was taken from the List of stripped Olympic medals issued by the governing body of the IOC. [13]

Table-1 [12]

List of weightlifters

S.no	Name	Country	Drug Consumed	Effects on Performance	Side Effectson Health
1	Ms. Manpreet Kaur	India	Testosterone	Helps in hard training and Faster recovery after training sessions.	High Blood pressure and facial growthamong women.
2	Ms. Geeta Devi (Double case)	India	Methandionene& Testosterone	Helps in Muscle Building.	Liver and Heart Diseases.
3	Ms. Hakirat Kaur	India	Testosterone	Helps in Muscle Building.	Liver and Heart Diseases.
4	Mr. JameerHussain	India	Testosterone	Helps in Muscle Building.	Liver and Heart Diseases.
5	Ms. MhaskarMeghali	India	Methandionene	Anabolic steroid-Helps inMuscle Building.	Estrogenic effects like fluid retention, liver damage,Hair growth, voice changes.
6	Mr. Ansu Singh	India	Nandrolone	Tissue Building Booster, Maintenance of muscle mass.	Hypertension,Diarrhea, Jaundice andMenstrual abnormalities in females.
7	Parneichong Kom Mangte	India	Nandrolone	Tissue Building Booster, Maintenance Of musclemass.	Hypertension,Diarrhea, Jaundice andMenstrual abnormalitiesin females.
8	Ms. Apurbachetia	India	Testosterone	Helps inMuscle Building	Liver and Heart Diseases.

9	Mr. RajeshPrasad	India	Testosterone	Helps in Muscle Building.	Liver and Heart Diseases.
10	Ms. Sonia Rani	India	Nandrolone	Tissue Building Booster, Maintained ofmuscle mass.	Hypertension, Diarrhea, Jaundice and Menstrual abnormalitiesin females.

Discussions of Findings:

As per the study conducted Weightlifters from India were taking drugs for performance enhancement were mostly Anabolic-androgenic steroids (AAS) and Stimulants in the form of Testosterones, Turibinol, Nandrolone, Methandionene, Dehydromethyl, Tamoxifen, Stanozolol & Oxandrolone. Anabolic- androgenic steroids (AAS) are usually used to build muscle mass, and as a result, they are linked to activities that need a high level of strength and peak power. Sometimes it suspects that the doping problem is within the IWF. They believe that there were few officials within the National and International Federations of Weightlifting who were Promoting a doping culture among weightlifters which is why weightlifters all over the world were consuming drugs free of fear. IWF also changes all weight categories in the weightlifting for men and women for the 2020 Tokyo Olympics but this also proves nothing [15].

A depressing issue for such historic sports:

Weightlifting was one of just nine sports at the first Olympics in 1896, but its days on the summer programme may be numbered. Weightlifting has had doping issues for decades but the issue has become so widespread that the IOC has previously threatened to withdraw its Olympic status. [16] Weightlifting also dominated the Indian doping scene to such an extent that the IWF International Weightlifting Federation suspended the country twice between 2004 and 2006 for having too many Indian competitors testing positive in Internationals. The study also revealed that these life-threatening drugs are easily and openly available to sportsperson. It is suggested that Sportspersons need to be made aware of doping and doping laws. Strict laws should be imposed on the pharmacist for selling such drugs to athletes without any prescriptions. After critical analysis of literature it was seen that low pricing anabolic androgenic steroids (AAS) drugs and its consequent affordability is one of the reason for weightlifters to have easy access to these drugs. The study also highlighted how do Indian players get free access to banned drugs - that too outside the prestigious National Institute for Sports in Patiala where Anabolic steroidal drugs are openly sold over the counter at chemist shops just a few hundred meters away from the NIS in Patiala.

The study also indicates that the majority of Indian weightlifters used testosterone. The physiological characteristics of testosterones are an androstanoid called testosterone has 17 beta-hydroxyl and 3-oxo groups as well as C-4-C-5 unsaturation. It functions as an androgen, a human metabolite, a metabolite in Daphnia magna, and a metabolite in mice. It is a C19 steroid, androstanoid, 17 beta-hydroxy steroid, and 3-oxo-Delta (4) steroid. From the findings of the study it is evident that majority of weightlifters competing internationally took turinabol (Chlorodehydromethyl testosterone). Turinabol has 4-Chloromethandienone, a 3-hydroxy steroid, as one of its chemical constituents. It plays the part of an androgen. Being the only AAS developed for non-medical uses, turinabol is a strong oral anabolic steroid with a distinctive history.

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