

Doping in Sports: Trends and Challenges in Indian Context

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Abstract

Globally doping has dented the image of competitive sports, blotted the careers and spoiled the health of players, since ancient times and India is no exception to it. Keeping in mind these facts, the present study aims at explaining doping in sports with regard to latest trends and challenges for creating awareness among Indian players, coaches and managers. In this study the terms pertaining to doping like doping agents, doping detection and sanctions have been briefly discussed according to latest World Anti-Doping Code, 2011. The international and national scenario of sports doping have been discussed while analyzing the data of doping cases of senior and youth players of national and international repute. The reasons of doping practices given by eminent sports scientists have been mentioned and appropriate discussion was initiated followed by suggestions and conclusion. These suggestions have been framed with an objective to effectively control the doping practices at national level in line with national anti-doping policy.

KEYWORDS: prohibited substances, methods, detection, sanctions, scenario

INTRODUCTION

Doping has been controversial in the sports since ancient times because its mismanagement is regarded as unfair and illegal. According to International Olympic Committee (IOC), "Doping is the administration of or use by a competing athlete of any substance foreign to the body or any physiological substance taken in abnormal quantity or taken by an abnormal route of entry into the body with the sole purpose of increasing in an artificial and unfair manner his/her performance in competition". It is generally perceived that doping is a use of illegal and banned substances, which artificially helps to improve the sports performance of athletes/players.

Nowadays, doping is one of the most challenging threats to competitive sports as it is widely used by school going athletes to international level athletes. In past forty years the use of anabolic steroids has become much more widespread and occurred at vast scale in the world (Wu, 1997 and Pour et al. 2009). Singh et al. (2008) commented that, "70% or more athletes are using anabolic steroids." It has been noticed that our players are always eager to use performance enhancing drugs without proper knowledge and prescription, which leads to blotting their sports career and spoil their health. Keeping in mind these facts, the present study aims at doping in sports to create awareness among the Indian players, coaches and sports mangers, while analyzing the national and international scenario of doping world. For this purpose things pertaining to doping like doping agents (prohibited substances and prohibited methods), detection and sanctions have been briefly discussed according to world anti-doping code, 2011. Further, the data of international and national scenario of sports doping are presented followed by discussion, suggestions and conclusion.

1. Doping Agents

Prohibited Substances (in and out of competition) are banned under the World anti-doping code. Anabolic agents (anabolic androgenic steroids and other anabolic agents), Peptide hormones and growth factors, beta-2 agonists, hormone antagonists and modulators, diuretics and other masking agents are covered under this category. Above mentioned prohibited substances are illegally used by the players as per the requirement of their event and game. But Anabolic Androgenic Steroids (AAS) and peptide hormones are commonly used as performance enhancing substances. Yavari (2009) concluded that as per IOC reports, the abuse of AAS is found in over 50% of positive doping tests. Prohibited Substances (in Competition) are banned during competitions. Stimulant, narcotics, cannabinoids and glucocorticosteroids come under this category. Alcohol and beta blockers are prohibited substances in particular sports during competition only.

Prohibited Methods (Enhancement of Oxygen Transfer, Chemical and Physical Manipulation and Gene Doping) are also banned under world anti-doping code. Mostly Blood doping is practiced for enhancement of Oxygen Transfer. As per Beotra (2000), "Blood Doping represents a method of increasing the hemoglobin concentration of the blood in order to increase the amount of oxygen that can be transported to the working muscles." Chemical and physical manipulation is the use of substances or methods for tampering in order to alter the integrity and validity of samples collected during doping control. Gene doping is the manipulation of genes and use of gene therapies. The gene doping is defined by World Anti-Doping Agency (WADA) as, "The non therapeutic use of genes, genetic elements and/or cells that have the capacity to enhance athletic performance." Around 1998 the use of gene doping appeared in sports world but no case of gene doping is detected till date. Presently scientists are working in gene doping but according to Krych and Anna (2008) that, "Studies on animal models showed that the uncontrolled transgene expression and insertional mutagenesis can even lead to death".

The adverse effects of doping agents are unlimited and life threatening. Among adverse effects, the major are psychological and physiological dependence, increases the risk of cardiovascular diseases, enhanced sexual disorders, malfunctioning of kidneys and liver, heavy growth of hair on face and body, disturbances in menstrual cycle and enlargement of clitoris, hypertension and hypotension. In most of the cases sleep disturbances, mental clouding, mood swings and depression chances are increased. Parkinson and Evans (2006) mentioned that, "Nearly 100% of AAS users reported subjective side effects."

2. Doping Detection and Sanctions

In order to ensure the fair and equal platform for participating athletes, that IOC and WADA developed the Urine testing and blood testing techniques i.e. Gas chromatography and Mass spectrometry to ensure the exact concentration of prohibited substances and prohibited methods. As per IOC and WADA rules, player can be selected anytime and anywhere for dope test and in case of any avoidance by the player, the results will be considered positive. Therapeutic use of prohibited substances is allowed. Recently detection of gene doping is impossible with present technology.

According to IOC and WADA, players detected positive as per guidelines of world anti-doping code with regard to prohibited substances and prohibited methods are punished as per sanctions of WADA rulings. At preliminary stage fine and ban are decided according to the nature of offence. Mostly, at first offence suspension from

competition, one month to two years suspension for future competitions is applied. On second offence, suspension up to eight years or life ban can be imposed on participation in any sports/event. Further, national federation or association may be fined or disaffiliated by the concerned authorities.

3. International Scenario of Sports Doping

Doping phenomena is not a product of recent days as Krych and Anna (2008) stated that, "First recorded case using substances enhancing athlete's performance dates back to the ancient Olympics." The use of doping steadily strides toward present status, again Krych and Anna mentioned that the first recorded lethal case was cyclist Aurthor Linton who died in 1896 of having taken strychnine. Wade (1972) believed that, "Russian uses the performance enhancing drugs from 1950." Hoffman and Ratamess (2006) concluded that, "First dramatic reports of anabolic steroid use occurred during 1954 world Weight Lifting Championship and spread through the 1960 in various Olympic sports." The Olympic doping history reveals that in 1960 Rome Olympics, the first ever death case reported when Danish cyclist under the influence of amphetamine fell during road race and died. IOC established a Medical Commission in 1967, against the misuse of drugs by international athletes. The first dope testing was undertaken at 1968 Mexico Olympics. At Munich Olympics in 1972, a major drug testing programme was introduced with more than 2000 tests undertaken only for stimulants and narcotics. Anabolic steroids were tested from 1976 Montreal Olympic Games. WADA was founded in 1999 and it effectively controls this highly challenge job since 2004. More than 35 WADA accredited labs have been established in 30 countries to control doping practices.

An analysis of doping trends at world level reveals that around 1965, countries from eastern block, especially German Democratic Republic (East Germany) started the use of drugs for national teams under the supervision of sports medicine experts (Franke and Berendonk, 1997 and Fitch 2008). No doubt dope testing and sanctions tighten the noose of the doping practices but its believed by many researchers that most of the international athletes use prohibited substances (Franke and Berendonk, 1997, Eenoo and Deelbeke, 2003). Dubin (1990) estimated that, "More than 50% of athletes use performance enhancing drugs." Black (1989) reported that, "70% of international level athletes of Australia were taking or had taken ergogenic aids." In recent years, gene therapy has shown progress and positive results that have highlighted the potential misuse of this technology and the debate of gene doping. For better understanding the data of Olympic athletes with regard to Olympic percentage of cases reported from 1968 to 2008 is presented below.

Table-1: Data of Athletes Detected Under Doping Violations in Summer Olympics from 1968 to 2008

Year	Place	# of Drug tests	# of Doping cases reported	% of Doping cases reported
2008	Beijing-China	4770	20	0.42%
2004	Athens- Greece	3667	26	0.71%
2000	Sydney- Australia	2359	11	0.47%
1996	Atlanta- USA	1923	02	0.10%
1992	Barcelona- Spain	1848	05	0.27%
1988	Seoul- S.Korea	1598	10	0.63%

1984	Los angles-USA	1507	12	0.80%
1980	Moscow- Russia	0645	00	0.00%
1976	Montreal-Canada	0786	11	1.40%
1972	Munich-Germany	2079	07	0.34%
1968	Mexico city- Mexico	0667	01	0.15%
	Total	21849	105	0.48%

Sports and Drug (www.procon.org)

Table-1 is self explanatory but the data of detected cases of Olympic athletes and percentage of doping practices quoted by eminent sports scientist is debatable and an area for future research. At international level weight-lifting, body building, baseball, cycling and football are among the widely abusers of prohibited substances (Pour et al. 2009).

The use of performance enhancing substances by adolescent/youth is the most dangerous thing happening at international level. Laure and Caroline (2005) conducted a wide study in France and concluded that, "56.6% adolescents accepted the use of doping products, out of which 33.2% of the cases received the product without asking for it, from their friends, parents and family doctors and 46.6% paid for the product." The survey of Blue Cross and Blue Shield Association (2001) reported that, "Steroids were the second most common substances used for athletic performance among 12 to 17 year old people, second to creatine (31% vs 57%)." In 1988, a study of 12th grade male students in the USA found that 6.6% had used or were using anabolic steroids (Buckley et al. 1988). Dawson (2001) mentioned that in 1993, Canadian Centre for Drug free sports estimated that 83000 children between the ages of 11-18 years used anabolic steroids in previous 12 months. The reports and data are presented by researchers indicates that doping trend among the youth has increased.

4. National Scenario of Sports Doping

At international level Indian athletes began to be tested in 1968 Olympics but at national level dope testing process started around 1990, with the establishment of Doping Control Centre under Sports Authority of India. At national level in 2003 dope testing process was accelerated and total 22 positive cases including 15 national medalists were detected and punished according to rules. Later National Anti-Doping Agency (NADA) was established as an autonomous society by Indian government but effective and independent dope testing process commenced from 2008, when National Dope Testing Laboratory (NDTL) got accreditation from WADA. Now, NDTL is working with mission to achieve excellence in the field of dope testing and to excel in research. Yearly the number of sample testing is very less (around 2000) in our country. During 2010 the number of sample testing (around 4000) increased due to Commonwealth Games but this process should be continued to control over the doping practices. During 2009 and 2010 total 95 positive cases were detected and all were punished accordingly.

**Table-2 Players Detected Positive in Prohibited Dope Substances in India
From 1.01.2009 to 31.12.2010**

S.No	Name of Game	No. of Cases
1	Body Building	34
2.	Weight Lifting	17
3.	Athletics	15
4.	Power lifting	08

5.	Boxing	05
6.	Wrestling	04
7.	Cycling and Judo	03 Each
8.	Taekwondo	02
9.	Hockey, Kabbadi, Swimming and Netball	01Each
	Total Cases	95

www.yas.nic.in

Table-2 is also self explanatory which indicated the list of sports persons tested positive against dope substances and sanctions imposed by anti doping disciplinary panel with effect from 1.01.2009 to 31.12.2010. In Commonwealth Games of 2010, a total 2047 dope tests were conducted from January to August 2010 out of which 103 Indian sports person including juniors flunked dope test. In Olympic history only two Indian female weightlifters were detected positive in 2004 Athens Olympics. Due to the negligence of standardized dope testing process till 2008 our players and coaches are far behind in regard to general awareness and adverse effects of doping.

DISCUSSION

In this paper, an attempt has been made to provide the latest knowledge of doping agents, doping detection and sanctions. No doubt dope testing and sanctions have checked the doping practices in recent times. Doping trends also indicates that the trend of doping practices as a policy matter disappeared from past two decades due to anti-doping movement, but it is believed that at the end of 20th century, most of the international athletes were using prohibited substances (Franke and Berendonk 1997, Eenoo and Deelbeke 2003). The data presented in the international scenario clearly indicated that doping practices still continue at international level. Pour et al. (2009) also believed that, "Doping occurred at high level in the world." Around 50% to 70% international athletes used prohibited substances and prohibited methods to improve the sports performance (Black 1989, Dubin 1990, Dawson 2001 and Singh et al. 2008). As per table-1 with regard to Olympic Games reveals that during 1992 and 1996 Olympics doping practice was seen minimum but from 2000 Olympic doping trend again had an upward turn. In Athens 2004 maximum dope cases were detected and in Beijing Olympic 2008, the rate of positive findings is lower than at Athens, but still number is among the high range. It cannot be deduced that the prevalence of doping has decreased; possibly, doping technology has become more sophisticated and a number of drugs cannot be detected (McGrath 2008). Above given facts and figures make it a challengeable for researchers and scientists. According to data presented with regard to youth (Buckly et al. 1988, Dawson 2001, Laure and Caroline 2005) it is a danger sign, requiring special policy to overcome the problems related to youth.

In Indian context authentic data is not much available, but it is generally assessed that during three decades (1970 to 2000) Indian players used prohibited substances and prohibited methods due to the negligence of implementation of anti-doping program at national level. It can easily be judged by the performance of our players in national competition and trials conducted for Asian and Olympic Games as compared to the performance given by the same athletes in Asian and Olympic Games. The authentic data related to dope cases of Indians before 2008 is not available but as per the cases detected in 2009 and 2010 (total number 95), it is estimated that Indian sports has under the shadow of doping practices. As the dope control process was initiated at

later stage, the quality and quantity of work was always in question. Presently NADA and NDTL are working but there is a great need to boost the anti-doping testing process at national level. As concerns to doping practices in Indian youth, data and research reports are once again not much available, but it can be commented as per media reports that status of our youth (school, college and university level) may be worse in comparison to international scenario, and this requires special attention and complete implementation of dope testing and proper education of the youth.

It is always debated why athletes take prohibited substances when they are aware about detection, sanctions and adverse effects of doping. Some of the major causes and reason pointed out by renowned scientist and researchers of this field are: firstly, the psychology of winning and being superior to competitors (Unal and Unal 2004 and Petroczi 2007); secondly, lack of proper knowledge about doping agents (Yeasils 2000 and Hoffman 2002); thirdly, the drug market which boosts the drug abuse in sports. The easy access of drugs through body building clubs and internet advertising are factors of this increasingly misuse of doping agents (Hoffman and Rotamess 2002, Kickman 2008 and Yavari 2009). If concerned bodies and nations want to minimize or at least control this process, effective value based education programme creating strong anti-doping culture should be promoted and proper anti-doping education should be imparted from early development stages.

SUGGESTIONS

Certain suggestions are drawn on the basis of above discussion as it will help to create the anti-doping movement which ultimately checks the misuse of doping agents.

1. Strong anti-doping awareness scheme need to be initiated through the national sports federations, associations and affiliating bodies among the top ranking participating athletes. The doping statistics of Indian sports population should be publish year wise and game wise to create the awareness among Indian sports fraternity.
2. Illegal black market of drugs should be deregulated by law-enforcement agencies. The purchase of doping agents only should be allowed after proper prescription of physicians.
3. An anti-doping culture should be maintained from the grassroots level. The proper value based education of anti-doping practices should be imparted from development stages i.e. school, college and university.
4. Physical education teachers and coaches should be properly equipped with latest knowledge of doping to cope up within field problems. Doping studies should be an important part of their curriculum in professional courses i.e. B.P.Ed, M.P.Ed and sports coaching diplomas.
5. Testing process should be accelerated at national level with standardized procedure and latest techniques. School National Championships, All India Inter-University Championships and Open National Championships have to be a part and parcel of testing process and sufficient finance for the same should be provided by concerned agencies.

CONCLUSION

At international level doping is the part and parcel of competitive sports since ancient times and India is no exception. There is a great need to educate the players, coaches and sports managers to overcome the doping menace in sports. In Indian context

there is a dire need to implement the proper policy of anti-doping program for effective control over the doping practices at national level.

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