



## **Awareness on the Use of Steroidal Drugs among Basketball Players in School**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author KVR designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors DG and KS managed the analyses of the study. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2020/v32i1730668

#### Editor(s):

(1) Dr. Barkat Ali Khan, Gomal University, Pakistan.

#### Reviewers:

(1) Mazin Nadhim Mosa Al-Ugla, Basra University, Iraq.

(2) Hosein Kimiaei-Asadi, Hamedan University of Medical Sciences, Iran.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/59661>

**Original Research Article**

**Received 02 June 2020**  
**Accepted 06 August 2020**  
**Published 24 August 2020**

### **ABSTRACT**

**Background:** The use of performance enhancing drugs by pre-teenagers and teenagers has increased tremendously over the past decade. The trend is driven by multiple factors, including the decrease in the age of participation in competing sports, the increase in popularity of team sports. The questions were distributed through an online survey planet link to the study professionals including 69 basketball professionals. The participants were explained in detail about the purpose. The questions were carefully studied and the corresponding answers were marked by the participants the data was collected and statistically analysed. From the current study, about 83.3% of the population were aware of the use of steroidal drugs in basketball and 16.7% were not aware of it. Majority of the population are aware of the use of steroidal drugs in sports and they are aware of the harmful effects of it.

*Keywords: Basketball; drugs; performance; sports; students.*

## 1. INTRODUCTION

Basketball is a modern ball game that belongs to the team sports family. It combines the best characteristics of various subsidiaries of sport, that is, the benefits of athletic capabilities, technical ability, and tactical discipline. It's a tough body contact Olympic team sport that concentrates on running, jumping, sprinting, throwing, hitting, blocking, and pushing. It's a team game that requires a high degree of preparation to complete 16 minutes of competitive action and achieves success. In this game, relative positions are typified as interrupted and changing constantly in response to various offensive and defensive circumstances in which morphometric characteristics and elevated levels of strength, muscle power, aerobic capacity, and basketball tossing velocity are the most important factors that give a clear benefit to successful elite participation levels of Basketball leagues. There is a tendency to take steroids among basketball players to enhance performance.

There are many types of drugs, which were used by athletes to improve performance. There are many studies which review different categories of drugs: those that enhance performance as stimulants, those that are used to reduce tremor and heart rate and those involved in body weight gain or loss [1]. The first ban on "stimulating substances" via a sporting organization was brought by means of the International Amateur Athletic Federation in 1928 [2]. Steroids and Non-steroidal antiinflammatory drugs (NSAID) are frequently used in sports activities medicine. NSAIDs are over-the-counter pills and NSAIDs are often taken at high doses through athletes with unrestricted access. Severe unfavorable outcomes have been stated consisting of acute renal failure, and gastrointestinal disorders.

Steroid administration is often associated with various adverse effects that are generally dose related. High and multi-doses of steroids used for athletic enhancement can lead to serious and irreversible organ damage. Among the most common adverse effects of steroids are some degree of reduced fertility and gynecomastia in males and masculinization in women and children. Other adverse effects include hypertension and atherosclerosis, blood clotting, jaundice, hepatic neoplasms and carcinoma, tendon damage, psychiatric and behavioral

disorders. More specifically, this article reviews the reproductive, hepatic, cardiovascular, hematological, cerebrovascular, musculoskeletal, endocrine, renal, immunologic, and psychologic effects.

Sport has to additionally be a source of aspirational behavioural change however this 'legacy effect' of elite game is modest, possibly due in part to the general public disillusionment introduced by repeated drug scandals [3-5]. The origin of the usage of tablets in sports goes back to the very advent of sports activities itself. There are reviews of the usage of special diets with the aid of athletes in 688 BC Ancient Olympic Games in Greece [6].

The discrimination between healing and abusive use of medication in sports activities is performed using threshold concentrations or reporting levels, and the detection of the materials in a sample is handiest said as an detrimental analytical locating while the awareness exceeds the threshold or the reporting level [7]. The use of positive overall performance-improving pills (PED) is banned in recreation [8]. However, while studies have generated information about placebo outcomes on sport performance, there are limited studies devoted to how this could assist applied practice [9].

Athletic lifestyles may lead to drug abuse due to a few reasons, which includes for performance boosters, to self-treat otherwise untreated mental illness, and to deal with stressors, along with stress to perform, injuries, bodily pain, and retirement from game [10]. The use of performance-enhancing tablets by way of pre-young adults and teenagers has multiplied tremendously over the past decade. This fashion is driven by using a couple of factors, such as the decrease inside the age of participation in competitive sports, the increase in reputation of team sports activities. Types of overall performance improving pills. Among the most famous PEDs are anabolic steroids, human increase hormone, erythropoietin (EPO), beta-blockers, stimulants and diuretics to name just a few. While tablets which include those get a lot of publicity, they're possibly not well understood. Previously our department has published extensive research on various aspects of prosthetic dentistry [11-19], this vast research experience has inspired us to research awareness on the use of steroidal drugs among basketball players in school.

## 2. MATERIALS AND METHODS

A self administered questionnaire with open ended questions eliciting the awareness about the various aspects of steroidal drugs were distributed through an online survey planet link and the study population included 69 male basketball professionals in a high school in Chennai city, India. The participants were explained about the purpose of the study in detail the questions were carefully studied and answers were marked by the participants. The data pertaining to the various responses were collected and statistically analysed.

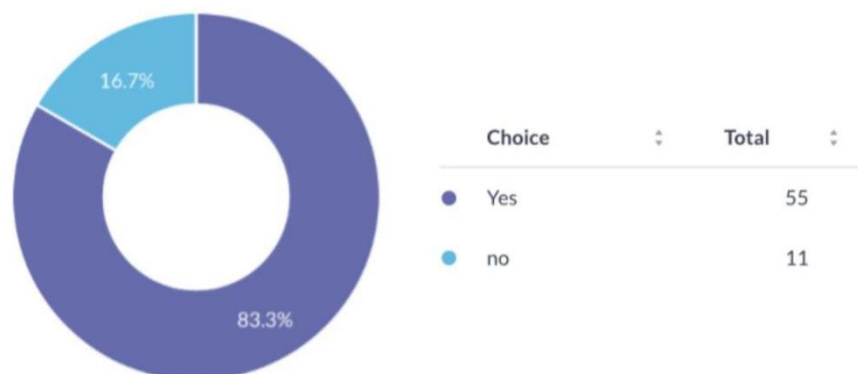
## 3. RESULTS AND DISCUSSION

In this study, about 83.3% of the population were aware of the use of steroidal drugs in basketball and 16.7% were not aware of it [Fig 1]. In a study by R. Terney, a majority of 74% were aware of the usage of drugs. Fig. 2 shows 85.3% knew that the drugs which were taken in sports are injurious to health and 14.7 percentage of the population did not know that it was injurious to health. In a study by B Desbrow, 74% of respondents know that drugs are injurious to health. Fig. 3 shows 81.8% of the population knew that drug usage had adverse side-effects on an individual's health and 18.2 percent of the population did not know that usage of drugs will cause side-effects. In a study by R. Terney, a majority of 79% knew the side effects due to the usage of the drugs [13].

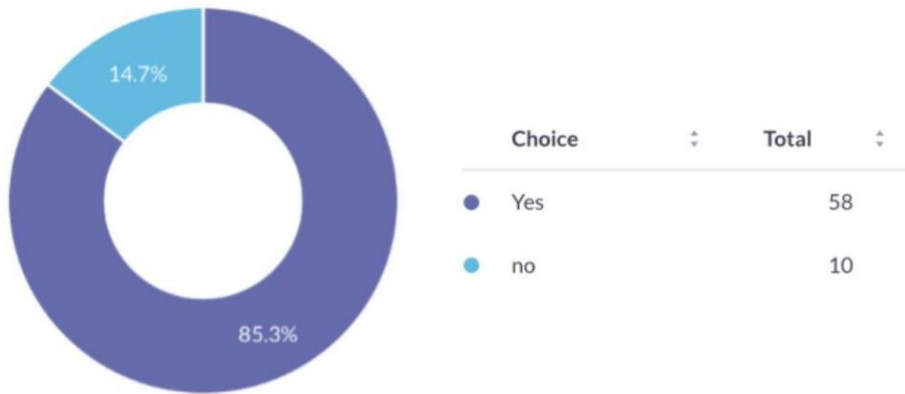
Fig. 4 shows 31.3% of the population thought that it was okay to use drugs for sports but a

majority of 68.7 percent of the population did not think that it is okay to use drugs and sports, in a study by R. Terney, a minority of 12% said it was okay to use drugs for sports. Fig. 5 shows the majority of 90.8% of the participants knew that the drugs will have an impact on the social behavior of the individuals very small percentage of the population of about 9.2% did not think that the drugs will have a negative impact on the social behavior of the individual. In a study by B Sain, a majority of 53% think that the drugs will have a negative impact on the social behavior of the individual [14,15]. Fig. 6 shows 56.5% find drugs easily available and of light, a lesser percentage of about 43.5% of the population did not think that the availability of drugs are easy. In a study by R. Terney, 77% said the availability of drugs is not easy.

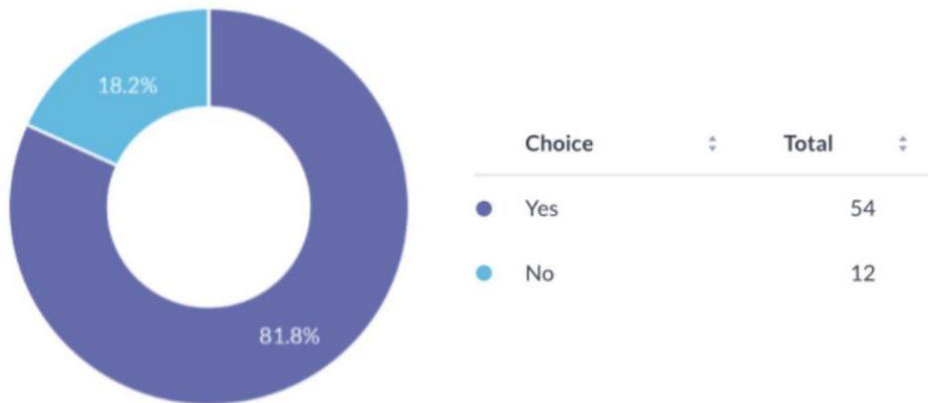
Steroid administration is often associated with various adverse effects that are generally dose related. High and multi-doses of steroids used for athletic enhancement can lead to serious and irreversible organ damage. Among the most common adverse effects of steroids are some degree of reduced fertility and gynecomastia in males and masculinization in women and children. Other adverse effects include hypertension and atherosclerosis, blood clotting, jaundice, hepatic neoplasms and carcinoma, tendon damage, psychiatric and behavioral disorders. More specifically, this article reviews the reproductive, hepatic, cardiovascular, hematological, cerebrovascular, musculoskeletal, endocrine, renal, immunologic, and psychologic effects.



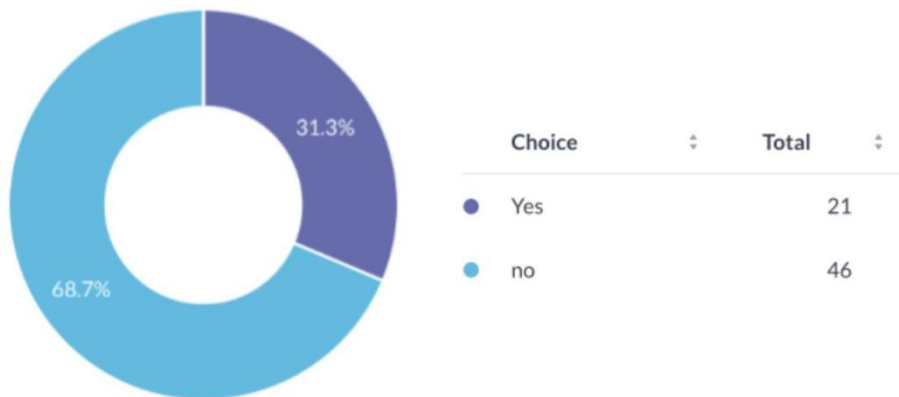
**Fig. 1. This pie chart represents the percentage distribution of respondents, who are aware of the use of steroidal drugs among basketball players, where violet represents yes and blue represents no. A majority of 88.3% are aware of the use of steroidal drugs in sports and 16.7% said no**



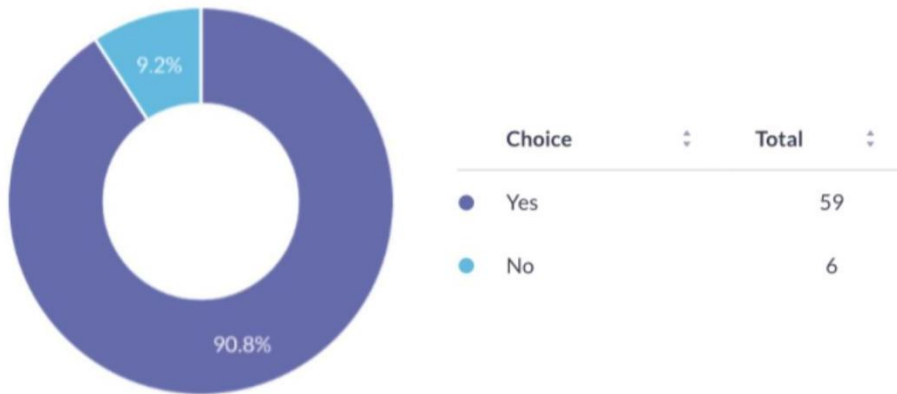
**Fig. 2.** This pie chart represents the percentage distribution of respondents, who are aware that the use of steroidal drugs is injurious to health. Where while at the present says and blue represents no, 85.3% say this and 14.7% said no



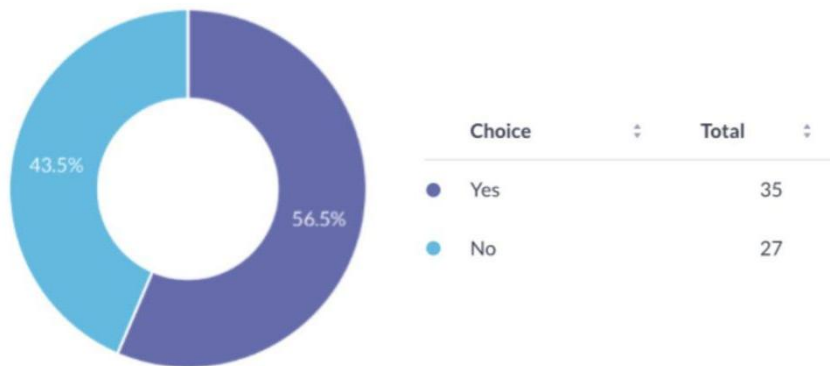
**Fig. 3.** This pie chart represents the percentage distribution of respondents, Who are aware of the side-effects of the use of steroidal drugs, where violet represents yes and blue represents no. A majority of 81.8% said yes and the remaining 18.2% said no



**Fig. 4.** This pie chart represents the percentage distribution of respondents, who think that it is okay to use steroidal drugs in basketball, where violet represents yes and blue represents no. A majority of 68.7% said no and 31.3% said yes



**Fig. 5.** This pie chart represents the percentage distribution of respondents, who think that these drugs will have an impact on the social behaviour of the individuals, where violet represents yes and blue represents no. A majority of 90.8% said yes and the remaining 9.2% said no



**Fig. 6.** This pie chart represents the percentage distribution of respondents, who think that steroidal drugs are easily available, where violet represents yes and blue represents no. A majority of 56.5% said yes and 43.5% said no

The basketball players sustain various degrees of injuries to the knees, joints, and ligaments [13,14]. Several female players also experience menstrual problems also [15]. These could be another possible reason for usage of steroidal and nonsteroidal anti-inflammatory drugs among basketball players. A better understanding of the training stimulus and adaptations occurring during progressive loading and tapering periods, especially during periods of intense physiological and psychological stress would improve training assessment, training load prescription, and also to possible intake of steroidal drugs [16].

#### 4. CONCLUSION

Within the limitations of this study following conclusion can be drawn, majority of the

respondents are aware of the steroidal drugs and its effects on physical and mental health, awareness camps can be conducted about these drugs not only for the individuals in sports but also the students who are easily attracted to steroidal drugs for the purpose of enhancing their physical abilities.

#### CONSENT

Informed consent was obtained from all the participants.

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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