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RESEARCH ARTICLE

PREVALENCE OF 'HEALTH SUPPLEMENT' USE AND ANDROGENIC ANABOLIC STEROID ABUSE AMONG ATHLETES IN JAMMU AND KASHMIR.

Khawar Khan¹, Rabbanie Tariq Wani² and Najeeb Rasool³.

1. Department of Medicine, Shri Maharaja Hari Singh Hospital, Srinagar, Jammu and Kashmir, India.
2. Department of Preventive and Social Medicine, Government Medical College, Srinagar, Jammu and Kashmir, India.
3. Department of Medicine, Defence Hospital, Saudi Arabia.

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Abstract

Introduction: The use of anabolic steroids and the health supplements by athletes has been increasing over last few decades. The health risks associated with the use of them makes it necessary to study the patterns and prevalence of such behavior.

Aim: To study the prevalence of Health Supplement and androgenic anabolic steroid use among the athletes in Jammu and Kashmir

Methods and materials: Gyms were randomly selected over Jammu and Kashmir and the athletes were made to fill in the questionnaires after proper instruction by the investigator, the questionnaires with discrepancies and inadequacy were left out.

Results: The study enrolled 214 athletes, both men and women all over J&K. The mean age of the participants was 26.98. The prevalence of health supplement use was 38.32% which mainly included protein based supplements, the prevalence of androgenic anabolic steroid use was 7.1%.

Conclusion: There is high prevalence of health supplement use among the athletes in Jammu and Kashmir, the prevalence of steroid abuse was also considerable. There is an urgent need for education of athletes about the potential risks of indulging in such behaviour.

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Introduction:-

With the advancement of social media and increasing influence of entertainment industry, there has been increase in the youngsters aspiring for a fit and muscular body. The number of the youngsters visiting gymnasiums and health has considerably increased over a last few decades. These individuals visit gyms mainly for aerobics to lose weight, or for resistance training to gain muscles. Their workouts usually contain both isometric and isotonic exercises depending upon their aims. However, a times, these athletes do not find the changes as expected and resort to the use of various supplements and drugs. The most important of them being health supplements and Androgenic anabolic steroids(AAS).

According to the United States of America Food and Drug Administration (FDA) any product labeled as a "supplement" means that its contents and the claims on the label have not been approved or evaluated by the FDA (1,2) The most commonly used health supplements by athletes include protein products, energy drinks and shots ,

Corresponding Author:-Rabbanie Tariq Wani.

Address:-Department of Preventive and Social Medicine, Government Medical College, Srinagar, Jammu and Kashmir, India.

creatine, amino acids, multivitamins with caffeine, beta-hydroxy-beta-methylbutyrate, dehydroepiandrosterone, and an unspecified mix of “testosterone boosters”⁽³⁾ Like all other supplement, health supplements used to improve athletic performance may also have side effects associated with them. Some of these health supplements may contain mixture of various botanical and chemical formulations. Additionally, intake of these supplements in patients of liver or kidney disease can be detrimental. So, it becomes necessary for the athletes to consult a doctor before using any of these health supplements. The steroids are a general class of compounds that have a similar structure which contains three 6-carbon rings and a joined 5 carbon ring, this structure, common to all the steroids, is often called cyclopentanoperhydrophenanthrene ring. Cholesterol is the basic precursor of all the steroids which generally contain two classes of drugs: Corticosteroids and Anabolic steroids. This article shall discuss mainly about the anabolic steroids and the ‘steroids’ will be used interchangeably with anabolic steroids.

The misuse of anabolic steroids, i.e the non medical use, has been a hot topic for discussion for last five decades. The history of this misuse dates back to second world war, when it was suspected that the Nazi soldiers used some magical compounds for strength and endurance. However this notion is mostly based upon rumours and there is no sound evidence supporting it⁽⁴⁾. The use of anabolic steroids endurance and strength by the sportsmen can be extrapolated to 1950’s.^(5,6) The anabolic steroids consists of class of natural male sex hormone, testosterone, together with a set of synthetic testosterone, or its analogues, used clinically to treat several conditions such as reproductive system dysfunction, breast cancer, and anaemia. Anabolic steroids have androgen effects (masculinisation effects) and anabolic effects (increase in the muscle mass).⁽⁷⁾

Testosterone, the primary male sex hormone, is manufactured in the testes under the influence of luteinizing hormone (LH) in amounts of 2.5-11 mg/day. However to get the desired effects, athletes use the doses 10-100 times the doses for medical purposes. The chronic use of AASs can cause various pathologic alterations, which are related to dose, frequency, and patterns of use. Adverse effects include the hepatic, cardiovascular, reproductive, musculoskeletal, endocrine, renal, immunologic, and hematologic systems, as well as psychological and psychiatric effects.⁽⁸⁾ Deaths have been reported which were caused by sudden cardiac death (SCD), acute coronary events, deranged serum lipoproteins, and ventricular hypertrophy.⁽⁹⁾

It has been seen that such high doses of AAS can cause hypertension, increased LDL cholesterol, acceleration of atherosclerosis and infertility and long term psychiatric problems^(10,11,12,13,14,15,16,17,18)

With their fast desired effect of increased endurance and muscle mass, the prevalence of their use has been rising since the middle of this century. The use is more common among adolescent men and those who have been dissatisfied with the improvement in muscle growth after many years of working out and dietary supplements.^(19,20,21) One study showed that the global lifetime prevalence of steroid misuse was 3.3%. The prevalence rate for males, 6.4%, was significantly higher than the rate for females, 1.6%.⁽²²⁾ Age-of-onset studies consistently showed that AAS use begins later than most drugs, with only 22% of users starting before age 20.⁽²³⁾ The prevalence of anabolic steroid use among athletes has been reported to be less than 10.0% in US.⁽²⁴⁾ Among gym users in Sweden it was 3.9%.⁸, in Nigeria it was 5.6%.⁹ and Iran it was found to be around 20%^(25,26,27)

Hence, from the above data it becomes evident that there are a considerable number of youth who are at risk of developing various adverse effects of AAS. It makes it paramount to study the prevalence and patterns of the misuse worldwide. Since most of these drugs and supplements are very easily available in the developing countries like India, the trends are more important to be studied here, to measure the extent of the menace. However, most of the studies have been limited to Canada, Brazil, North America and a few European countries.

Objectives:-

To find out the prevalence of Natural health supplements and Androgenic Anabolic Steroid use among the athletes or fitness enthusiasts, both males and females, in the state of Jammu and Kashmir.

Methodology:-

Design and participants:

This was a cross sectional study which involved participants from all over Jammu and Kashmir. Gyms were selected randomly and athletes filled the questionnaires after proper instructions by the investigator. The questionnaire contained questions regarding the duration of working out, use of recreational drugs, use of health supplements, use and duration of use of anabolic steroids, use of diuretics and amphetamine derivatives and questions about use of post steroid LH/FSH analogues for recovery.

Statistics:

The data were analysed using SPSS software (17th edition) and $P < 0.05$ was considered significant. Quantitative and qualitative data were reported using mean \pm standard deviation and infrequency (percentage). After checking normal distribution of quantitative data, the parametric or nonparametric tests were used. For the analysis of qualitative data with normal distribution, Student's t-test, ANOVA, and Pearson correlation and for the abnormal distributed variables, Mann-Whitney U, Kruskal-Wallis, and Spearman correlation tests were used.

Results:-

Our study enrolled a total of 250 athletes from Jammu and Kashmir, however 36 of them were dropped out due to inadequate filling and discrepancies of the questionnaire. Out of them 92.5%(198) were males, while 7.5%(16) were female. The mean age of participants was 26.98(SD=5.93) The percentage of the participants who regularly went to the gym for more than a year was 33.2%(71), those less than 6 months were 30.8%, those who were regular gym visitors for 6-12 months were 7.0%(15), 21.5%(46) had been working out in the past, while a 7.5%(16) participants had never been regular to the gym. Out of the total participants 38.32% (82) had been taking or had taken health supplements in the past, and 67%(55) out of them had used/were using only protein based supplements like Whey protein, while 25.6%(21) used combination of protein and creatine.

Among our study participants, 8.4%(18) had used drugs other than natural supplements. Out of the total participants, 7.1%(15) had used anabolic steroids, while the 1.3% accepted use of diuretics, amphetamine and thyroid hormones for weight loss. All of these participants were males and all except one had been regular gym visitors for more than a year. Two out of these 18 participants, had a previous history of intake of recreational drugs like marijuana.

Among the subjects who had used anabolic steroids, 50% were planning to use them again in future. 46.7 % (7) of the anabolic steroid abusers had further used LH/FSH analogues for regaining the normal testosterone axis after the use of anabolic steroids.

Discussion:-

This study was done in the state of Jammu and Kashmir and included males as well as females. It was found that more than one third of the young athletes had taken health supplements, mostly protein based supplements, during their lifetime. In a study, done by Monica Sousa et.al in 2016, the percentage of athletes using health supplements was 64%.⁽²⁸⁾ Another study done in the United States showed that 89% of adult athletes were using at least one supplement at the time of the study.⁽²⁹⁾ A study done by Ayman al jawadi in Saudi Arabia found that the prevalence of health supplement use was 37.8%⁽³⁰⁾ and a Lebanese study showed a prevalence of 36.3% among athletes.⁽³¹⁾ Both of these results were comparable to the results of our study.

The supplements were mostly used by males and those who had been visiting the gymnasium for more than 6 months. In our study it was further found that a substantial number of the athletes(8.4%) had used substances other than health supplements for gaining muscle or losing weight. These substances included amphetamine, thyroid hormones and diuretics, but the majority of this group(7.1% of total sample) had resorted to the use of Androgenic anabolic steroids. All of these participants were males and all except one had been regular gym visitors for more than a year. Two out of these 18 participants, who had misused anabolic steroids, had a previous history of intake of recreational drugs like marijuana, alcohol and cocaine. The researchers worldwide have found varying results in their studies.


In a study conducted in Iran, it was found that the total lifetime prevalence of anabolic steroid use was 24.5%⁽³²⁾. In a meta-analysis done by Dominic Sagoe the global lifetime prevalence rate of AAS abuse, obtained among athletes was 3.3%, it was 6.4 % in males and 1.6% in females⁽³³⁾. In our study, among the subjects who had used anabolic

steroids, half of them were planning to use them again in future. Half of the AAS users had used FSH analogues/LH analogues/HCG after or along with the anabolic steroids.

Conclusion:-

This study shows high prevalence of health supplement use among the Kashmiri population. Anabolic steroids use is also considerable among the athletes. Due to the substantial risks associated with the use of these supplements and steroids, education and awareness about them becomes necessary. No such studies have been conducted in India previously, therefore this study can form the basis of future elaborative research in the country.

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