

Substance Abuse Associated with Anabolic Steroid Abuse in People Visiting Gymnasium and Health Clubs

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ABSTRACT:

National Survey on Drug Use and Addiction estimates that about one million individuals in the U.S. are current or past users of anabolic steroids, with over 300,000 individuals using anabolic steroids each year. Many of those using anabolic steroids are aware of the dangers of taking them, and they believe they can avoid the side effects by taking the drugs a certain way. There are risks associated with using steroids without a prescription or supervised by your doctor, even as part of a weight-training program. Physical withdrawal symptoms, similar to those seen in opiate withdrawal, have occurred upon cessation of extremely high doses of steroids. Moreover, the developing nervous system of children may be especially vulnerable to the psychological effects of steroids. Therefore, a study was carried out on 114 participants visiting various health clubs and gymnasium in Delhi NCR. The data collected was tabulated and analyzed. It was observed that there was a significant difference in between the younger and older age groups more participants belonging to age group >30 years were found to have moderate to severe dependence. The finding of the present study shows that significantly more participants who were AAS dependent also suffered from other psychiatric co-morbidities as compared to non-user/ non-dependent users.

Keywords: Substance Abuse; gymnasium and health clubs; anabolic steroids; AAS dependent

INTRODUCTION:

Prevalence Although the exact prevalence rate for anabolic steroid use is unknown, data from the National Survey on Drug Use and Addiction estimates that about one million individuals in the U.S. are current or past users of anabolic steroids, with over 300,000 individuals using anabolic steroids each year. The National Household Survey on Drug Abuse conducted by the Substance Abuse and Mental Health Services Administration determined 1,084,000 Americans, or 0.5% of the adult population, reported having used Anabolic steroids (Foley and Schydlower, 1993).

Other drugs of abuse or substances that are not considered anabolic steroids are also improperly used for cosmetic and sports-enhancing purposes. Why People Misuse Anabolic

Steroids Anabolic steroids can be used as a performance-enhancing drug, increasing lean body mass and decreasing body fat, while causing a variety of undesirable effects. People who use and abuse anabolic steroids do so because of the effects associated with improved athletic performance and increased muscle mass (Bahrke, 2007; Maravelias et al., 2005).

Many of those using anabolic steroids are aware of the dangers of taking them, and they believe they can avoid the side effects by taking the drugs a certain way. For instance, individuals who use androgenic anabolic steroids are usually among the healthiest individuals on earth. As societal attitudes toward the acceptance of anabolic-androgenic steroid use shift, better profiling of this patient population could be seen. Overall data to show benefits from anabolic steroids for significant enhancement in sports performance is limited. In general, however, a few studies have investigated peoples experiences following anabolic steroids use, or use of other performance-enhancing drugs, for imaging purposes (Frankle et al., 1988; Goldberg and Hillier, 1979).

Many sports associations prohibit anabolic steroid use, including the National Football League (NFL), Major League Baseball (MLB), National Collegiate Athletic Association (NCAA), and Olympic Games, and therefore, very few athletes are willing to admit that they have used such drugs. Believing anabolic steroids improve competitiveness and performance, uninformed or deluded athletes, sometimes encouraged by coaches or parents, misuse these drugs to gain lean muscle mass, foster aggression, and gain weight. Although steroids do not chemically create euphoria or a high alike typical substances that cause addiction, those who abuse these drugs on a regular basis are at risk for developing severe addiction. It might not be apparent, but steroids are addictive, meaning that those taking them can keep taking them even as the side effects get worse or the use impacts their lives in undesirable ways (Buckley et al., 1988; Kanayama et al., 2009).

There are risks associated with using steroids without a prescription or supervised by your doctor, even as part of a weight-training program. Illicit drugs can be used to enhance or diminish the effects of anabolic-androgenic steroids (e.g., for pain management, for increased energy levels, or for promoting sleep) and so doping prevention efforts are suggested to also target other illicit drugs . The National Institute on Drug Abuse (NIDA) estimates that over one-half million eighth- and 10th-grade students are currently using steroids, with increasing numbers of older students expressing no opinion on steroids being dangerous.

Anabolic steroid withdrawal and dependency disorders have also been reported (Bahrke et al., 1996; Nakhaee et al., 2013). Acute anabolic steroid withdrawal may produce symptoms of central nonadrenergic hyperactivity including anxiety, irritability, insomnia, hot flashes, sweats, chills, anorexia, myalgia, nausea, vomiting, piloerection, tachycardia, and hypertension (Bahrke et al., 1990). Steroids may be psychologically addicting, even meeting the DSM-IV criteria for psychoactive substance dependence in some cases. Electroencephalogram changes similar to those seen with psychostimulant drugs have been reported with steroid use (Kashkin and Kleber, 1989). Physical withdrawal symptoms, similar

to those seen in opiate withdrawal, have occurred upon cessation of extremely high doses of steroids. Moreover, the developing nervous system of children may be especially vulnerable to the psychological effects of steroids.

MATERIALS AND METHODS:

Study Design:

This was a cross sectional study, the sample included the gym going population of local gymnasiums in Delhi NCR.

Study group: Gym going population of local gymnasiums in Delhi NCR.

Place of study: Delhi NCR

Methodology:

All the participants were provided with written and informed consent proforma to be signed by them. Those participants who gave their consent were included in the study. Participants were given instructions for filling the semi- structured proforma. Chi square test and t-test was applied for comparisons.

Following psychiatric rating scales will be used for collection of data: -

1. General Health Questionnaire 28
2. Semi-Structured Proforma For Socio-Demographic Data.
3. The Drug Abuse Screening Test.

General Health Questionnaire 28

GHQ-28 is a 28-item measure of emotional distress in medical settings. Through factor analysis, the GHQ-28 has been divided into four subscales. These are: somatic symptoms (items 1–7); anxiety/insomnia (items 8–14); social dysfunction (items 15–21), and severe depression (items 22–28) (Goldberg 1978). It takes less than 5 minutes to complete.

Semi-Structured Proforma:

Semi structured proforma was made to collect socio-demographic details like name, age, gender, year of education, residential background, family and personal history of psychiatric illnesses, etc.

The Drug Abuse Screening Test (DAST)

The Drug Abuse Screening Test (DAST) was designed to provide a brief instrument for clinical screening and treatment evaluation research. The 28 self-report items tap various consequences that are combined in a total DAST score to yield a quantitative index of problems related to drug misuse.

RESULTS

TABLE 1: DISTRIBUTION OF PARTICIPANTS ACCORDING TO AGE

AGE	Percentage
1) 18-30	71.93%
2) >30	28.07%
Total	100.00%

TABLE 2: DISTRIBUTION OF PARTICIPANTS ACCORDING TO GENDER

Gender	Percentage
Female	11.40%
Male	88.60%
Total	100.00%

TABLE 3: DISTRIBUTION OF PARTICIPANTS ON THE BASIS OF DRUG ADDICTION SCREENING TEST -10 (DAST-10) SCORE:-

DAST-10 SCORE	Percentage
1) 0	60.53%
2) 1 to 2	18.42%
3) 3 to 5	19.30%
4) 6 to 8	1.75%
Total	100.00%

DISCUSSION:

The study comprised 114 people in total who provided written, informed consent and met the inclusion and exclusion criteria.

When compared to 15.84% of individuals in the age group 18 to 30 years, more participants in our study who were older than 30 were found to have moderate to severe dependence (DAST-10 score >2), which was statistically significant between the age groups. These results were consistent with data from Kaplan and Saddock's comprehensive textbook of psychiatry, which shows that dependence develops after the median age of onset, which is around 23 years in both the USA and other nations. In their study titled "Anabolic-androgenic steroid dependence: an emerging disorder" at USA, Kanayama G et al., 2009, also reported findings that were similar to these. (Yates et al., 1999)

We did not discover any appreciable differences in anabolic steroid use between the age groups, nevertheless. However, we discovered that individuals in the younger age group,

specifically those between the ages of 18 and 30, used AAS at a higher rate (64.71%) than those older than 30. This finding is consistent with statistics from Kaplan and Saddock's comprehensive textbook of psychiatry, which shows that the median age of initiation of AAS usage is roughly 23 years old and that only 5.9% of users started using AAS before the age of 17 (Pope and Katz, 1988). Likewise, Buckley W. E. et al 1988 study in Pennsylvania, USA, titled "Estimated prevalence of anabolic steroid usage among male high school seniors," found no appreciable variation in AAS use between age groups (Schwerin and Corcoran, 1996).

In terms of anabolic androgenic steroid use, we discovered that there was a statistically significant difference between the use of anabolic androgenic drugs by male and female participants. This result is consistent with data from Kaplan and Saddock, who suggested that the true rate of AAS usage in girls may be as low as 0.1% in their thorough textbook of psychiatry (Pope and Katz, 1988).

When AAS dependence in those with family history of psychiatric illness was compared to that in those without any family history of psychiatric illness, we discovered a statistically significant difference in terms of dependence assessed by DAST-10. We discovered that only 19.27% of participants with no family history of psychiatric illness were dependent on anabolic androgenic steroids as compared to 60% of participants with family history of psychiatric illness. Similar findings were made by Kanayama (Kanayama et al., 2009) in their 2009 study titled "Anabolic-androgenic steroid dependence: an emerging problem" in the USA. They discovered that people with a family history of mental illness had a higher risk of developing AAS dependent than people without a history. Bharke et al (Sternbach, 1998) study "Psychological and Behavioral Effects," contrasts with ours in several ways.

We identified a statistically significant difference between AAS dependence and other substance dependency, where participants with other substance dependence were more likely to be AAS dependent than those without other substance dependence. In contrast to 10% of participants who were not dependent on any other substance, we discovered that 38.64% of participants who were dependent on other substances were also dependent on AAS. These results concur with research by IP. et al. (Ip et al., 2012) in their study titled "Psychological and Physical Impact of Anabolic-Androgenic Steroid Dependence. Pharmacotherapy" and Kanayama G. et al. (2009) entitled "Anabolic-Androgenic Steroid Dependence: An Emerging Disorder", Iran .People who are AAS addicted are more likely to develop other substance dependence.

Male participants were found to use anabolic androgenic steroids more than the female participants which was statistically significant.

We found more dependence in participants belonging to intermediate education level when compared to graduate population that was statistically significant.

We found statistically significant difference between education levels. We found that participants belonging to graduate level were using more anabolic androgenic steroids (AAS) compared to those educated to intermediate level.

Also, it was observed that participants with family history of psychiatric illness were dependent on anabolic androgenic steroids more as compared to participants with no family history of psychiatric illness.

Participants with personal history of psychiatric illness were more dependent on anabolic androgenic steroids as compared participants with no personal history of psychiatric illness.

Participants having high AAS dependence scored significantly more positive on GHQ -28. These findings suggest that significantly more participants who were AAS dependent also suffered from other psychiatric co-morbidities as compared to non-user/ non-dependent users.

REFERENCES:

1. Bahrke MS. Psychological effects of endogenous testosterone and anabolic-androgenic steroids. 2007.
2. Bahrke MS, Yesalis CE, Wright JE. Psychological and behavioural effects of endogenous testosterone and anabolic-androgenic steroids. *Sports Medicine* 1996;22:367–90.
3. Bahrke MS, Yesalis CE, Wright JE. Psychological and behavioural effects of endogenous testosterone levels and anabolic-androgenic steroids among males. *Sports Medicine* 1990;10:303–37.
4. Buckley WE, Yesalis CE, Friedl KE, Anderson WA, Streit AL, Wright JE. Estimated prevalence of anabolic steroid use among male high school seniors. *Jama* 1988;260:3441–5.
5. Foley J, Schydlower M. Anabolic Steroid and Ergogenic Drug Use by Adolescents. *Adolescent Medicine (Philadelphia, Pa)* 1993;4:341–52.
6. Frankle M, Eichberg R, Zachariah S. Anabolic androgenic steroids and a stroke in an athlete: case report. *Archives of Physical Medicine and Rehabilitation* 1988;69:632–3.
7. Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. *Psychological Medicine* 1979;9:139–45.
8. Ip EJ, Lu DH, Barnett MJ, Tenerowicz MJ, Vo JC, Perry PJ. Psychological and physical impact of anabolic-androgenic steroid dependence. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy* 2012;32:910–9.
9. Kanayama G, Brower KJ, Wood RI, Hudson JI, Pope Jr HG. Anabolic–androgenic steroid dependence: an emerging disorder. *Addiction* 2009;104:1966–78.

10. Kashkin KB, Kleber HD. Hooked on hormones? An anabolic steroid addiction hypothesis. *JAMA* 1989;262:3166–70. <https://doi.org/10.1001/jama.262.22.3166>.
11. Maravelias C, Dona A, Stefanidou M, Spiliopoulou C. Adverse effects of anabolic steroids in athletes: a constant threat. *Toxicology Letters* 2005;158:167–75.
12. Nakhaee MR, Pakravan F, Nakhaee N. Prevalence of use of anabolic steroids by bodybuilders using three methods in a city of Iran. *Addiction & Health* 2013;5:77.
13. Pope HG, Katz DL. Affective and psychotic symptoms associated with anabolic steroid use. *The American Journal of Psychiatry* 1988.
14. Schwerin MJ, Corcoran KJ. Beliefs about steroids: user vs. non-user comparisons. *Drug and Alcohol Dependence* 1996;40:221–5.
15. Skinner HA. The drug abuse screening test. *Addictive Behaviors* 1982;7:363–71.
16. Sternbach H. Age-associated testosterone decline in men: clinical issues for psychiatry. *American Journal of Psychiatry* 1998;155:1310–8.
17. Yates WR, Perry PJ, MacIndoe J, Holman T, Ellingrod V. Psychosexual effects of three doses of testosterone cycling in normal men. *Biological Psychiatry* 1999;45:254–60.