

AWARENESS ABOUT THE ADVERSE EFFECTS OF ANABOLIC ANDROGENIC STEROIDS (ASS) IN BODYBUILDERS IN LAHORE**¹Dr. Muhammad Hanif Sultan, ²Azhar Hussain and ³Dr. Ammara Habib**¹House Officer at Lahore General Hospital, Lahore.²MBBS Student, Ameer Ud Din Medical College, PGMI, Lahore.³Women Medical Officer at DHQ Jauharabad.***Corresponding Author: Azhar Hussain**

MBBS Student, Ameer Ud Din Medical College, PGMI, Lahore.

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ABSTRACT

Anabolic Androgenic Steroids (ASS) have unfortunately become the breakfast of some youngsters inspiring to become champions. This causes various lasting problems for them and this act of usually teenage become regret for the rest of life. This study explores the basic knowledge about the various side effects of anabolic androgenic steroids both in abusers and non-abusers coming to the gyms and fitness centers of Lahore. The study was conductive from 18th Feb, 2018 to 29th March, 2018 in 4 gyms (1-Gymnasium of UET Taxila, 2-Gymnasium of UET Lahore, 3-Powerhouse Fitness club Lahore and 4-Smart Ladies & Gents Fitness Centre, Lahore). This was a cross-sectional study descriptive study. Sample was collected by non-probability way. A grand total of 104 body builders were interviewed and standardized questionnaires were filled. Overall the majorities of bodybuilders were between the ages of 21-25 years and were yet completing their studies. Most of them had education upto intermediate level and were unmarried. Interestingly majority of both abusers and non-abusers had no constant source of income. Another interesting aspect was that almost 40% of people heard about steroids from their friends and major other sources were lame too but among the 16 abusers only 5(31.3%) of people consulted any physician for the prescription or advise. However, as expected a higher percentage of the abusers were aware of the concept of stacking 9 (56.3%) and cycling 7(43.8%) as compared to non-abusers for whom the figures were 29(27.9%) and 18(17.3%) for stacking and cycling respectively.

KEYWORDS: Anabolic Androgenic Steroids (ASS).**INTRODUCTION**

Everyone wishes to enjoy a healthy and active life and get them engaged in various constructive activities, but in the recent few years the zest to look healthy has surpassed the desire to be. Young generation of this century usually finds particular interest in indoor body-reshaping sports like bodybuilding but these over enthusiastic and less informed people sometimes engage in taking steroid supplements to attain desirable results in a limited amount of time. Due to less awareness about the side effects of these performance boosters, Anabolic Androgenic Steroids (ASS) have unfortunately become the breakfast of some youngsters inspiring to become champions. This causes various lasting problems for them and this act of usually teenage become regret for the rest of life. The WHO and FDA USA have already warned the consumers about their wide ranging side effects and placed them in the list of controlled drugs since 2006. The Advisory Council on Misuse of Drugs (ACMD), London also characterized them as illegal and placed them in the list of class C controlled drugs under the Misuse of drugs act 1971. Some of these have quite

an impact and are notorious for that but there are still a huge number of effects about which masses have no or very little knowledge. Thus it is recommended that production, publicity and usage should be controlled by FDA and there should be proper legislation and licensing for doing business in these type of products.

This study explores the basic knowledge about the various side effects of anabolic androgenic steroids both in abusers and non-abusers coming to the gyms and fitness centers of Lahore.

Various researches have been conducted before exploring the same issue. A study conducted in Australia showed that post-pubertal patients whose sports supplements contain anabolic steroids present with male pattern hair loss, acne, osteoporosis, gynecomastia and low libido³. Another study showed that the majority of AAS users demonstrated hypogonadism with persistently low gonadotropin and testosterone levels.^[4] Another study threw light upon hepatotoxicity associated with illicit use of anabolic androgenic steroids in doping.^[5]

They were also held accountable for mediating aggressive behavior by modifying indirect pathways in latero-anterior hypothalamus.^[6] Further studies in North Carolina showed that anabolic, androgenic steroids can suppress the hypothalamic-pituitary-gonadal axis resulting in diminution of spermatogenesis.^[7] Studies in USA have showed that use of anabolic, androgenic steroids is associated with premature coronary artery disease and left ventricular dysfunction due to left ventricular hypertrophy^[8] and sudden cardiac arrest following ventricular fibrillation.^[9]

Regarding studies conducted on awareness about their side effects, one of them conducted in Rawalpindi and Islamabad showed that use of steroids in bodybuilders is continuously on the rise and a large number of them are using these products without proper awareness of their adverse effects.^[10] Another descriptive, correlational study conducted among male medical students of Mashad, Iran revealed that only 56.1% of students were familiar with some of the side effects of androgenic, anabolic steroids.^[11] Further, gymnasts in Riyadh, Saudi Arabia depicted inadequate knowledge about the side effects of androgenic, anabolic steroids in both AAS users and non-AAS users.^[12] Another cross-sectional survey of males attending fitness centers in Kuwait showed that only 6.8% of AAS users and 9.5% of non-AAS users knew that these products are harmful.^[13]

METHODOLOGY

The study was conductive from 18th Feb, 2018 to 29th March, 2018 in 4 gyms (1-Gymnasium of UET Taxila, 2-Gymnasium of UET Lahore, 3-Powerhouse Fitness club Lahore and 4-Smart Ladies & Gents Fitness Centre, Lahore).

This was a cross-sectional study descriptive study. Sample was collected by non-probability way. A grand total of 120 body builders were interviewed. A standardized questionnaire on socio-demographic status including name, marital status, age and education, occupation, per capita income, and a well-developed questionnaire on the awareness about the side effects of AASs were made, translated into the Urdu for convenience of the participants and filled. A person who was doing regular workout since at-least last 3 months was considered a body builder. Data was entered and analyzed on SPSS version 20. Frequencies were calculated for qualitative variables.

Table 1.

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20 Years	31	29.8	29.8	29.8
	21-25 Years	62	59.6	59.6	89.4
	26-30 Years	10	9.6	9.6	99.0
	31-35 Years	1	1.0	1.0	100.0
	Total	104	100.0	100.0	

RESULTS

Out of total 120 male participants, 104(86.67%) never used steroids in their lifetime while 16(13.33%) had history of steroids intake in their lifetime. Group 1 comprised of those participants who had never taken steroids. Group 2 was of those candidates who had history of steroids intake.

Out of total 120 male participants, 104 participants' questionnaires were dully filled and were evaluated. 31(29.8%) fell in range of 15-20 years of age. 62 (59.6%) fell in range of 21-25 years of age. 10(9.6%) fell in the range of 26-30 years of age. 1(1%) people fell in range of 31-35 years of age.(Table 1). 1(1%) had no formal education. 18(17.3%) were educated up to primary level. 40(38.5%) had education up to matriculation. 37(35.6%) were educated up to intermediate level. 8(7.7%) had education up to graduation and above.(Table 2). 18 (17.3%) were jobless. 69(66.3%) were students. 17 (16.3%) were labourers.(Table 3) 64(61.5%) had no source of income. 12(11.5%) were earning 5,000-15,000 per month. 18(17.3%) were earning 16,000-25,000 rupees. 10(9.6%) were earning 26,000-40,000 rupees per month.(Table 4) Out of 104, 8(7.7%) were married and 96(92.3%) were unmarried.(Table 5) The first source of information about steroids for 45(43.3%) was friends, 27(26%) journals, 15(14.4%) gym administration and 17(16.3%) some other sources.(Table 6)

Regarding awareness about the side effects, 45(43%) had knowledge about abnormal breast development (gynecomastia) (Table 7), shrinkage of testicles 36 (34.6%) (Table 8), baldness 37(35.6%)(Table 9), hepatitis 22 (21.2%) (Table 10), abnormal rage 29 (27.9%) (Table 11), irritability 35(33.7%) (Table 12), mania 19 (18.3%) (Table 13), delusions 21 (20.2%)(Table 14), acne 42(40.4%)(Table 15), jaundice 28(26.9%)(Table 16), oily scalp 27(26%) (Table 17), decrease in semen volume 26 (25%) (Table 18), oligospermia 19 (18.3%) (Table 19), azoospermia 18 (17.3%)(Table 20), voice deepening 15(14.4%)(Table 21), glaucoma 18 (17.3%) (Table 22), cataract 14 (13.5%)(Table 23), delayed wound healing 15(14.4%)(Table 24), osteoporosis 11 (10.6%) (Table 25), ulcers in stomach & duodenum 20 (19.2%) (Table 26), myocardial hypertrophy 12 (11.5%) (Table 27), chronic renal failure 23(22.1%)(Table 28).

29(27.9%) had some knowledge about the concept of stacking. 18 (17.3%) did know about the cycling concept.

Table 2.

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Formal Education	1	1.0	1.0	1.0
	Upto Primary	18	17.3	17.3	18.3
	Upto Matric	40	38.5	38.5	56.7
	Upto Intermediate	37	35.6	35.6	92.3
	upto graduation	8	7.7	7.7	100.0
Total		104	100.0	100.0	

Table 3.

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	18	17.3	17.3	17.3
	Student	69	66.3	66.3	83.7
	Labourer	17	16.3	16.3	100.0
	Total	104	100.0	100.0	

Table 4.

Per. Capita. Income					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	64	61.5	61.5	61.5
	5000-15000 rupees	12	11.5	11.5	73.1
	16000-25000 rupees	18	17.3	17.3	90.4
	26000-40000 rupees	10	9.6	9.6	100.0
	Total	104	100.0	100.0	

Table 5.

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	8	7.7	7.7	7.7
	Unmarried	96	92.3	92.3	100.0
	Total	104	100.0	100.0	

Table 6.

How did you first come to know about steroids?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Friends	45	43.3	43.3	43.3
	Journals	27	26.0	26.0	69.2
	Gym Administration	15	14.4	14.4	83.7
	Any other	17	16.3	16.3	100.0
	Total	104	100.0	100.0	

Table 7.

Breast Development (Gynecomastia)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	45	43.3	43.3	43.3
	No	59	56.7	56.7	100.0
	Total	104	100.0	100.0	

Table 8.

Shrinkage of Testicles					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	34.6	34.6	34.6
	No	68	65.4	65.4	100.0
	Total	104	100.0	100.0	

Table 9.

Baldness					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	35.6	35.6	35.6
	No	67	64.4	64.4	100.0
	Total	104	100.0	100.0	

Table 10.

Hepatitis					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	21.2	21.2	21.2
	No	82	78.8	78.8	100.0
	Total	104	100.0	100.0	

Table 11.

Abnormal Rage					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	27.9	27.9	27.9
	No	75	72.1	72.1	100.0
	Total	104	100.0	100.0	

Table 12.

Irritability					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	33.7	33.7	33.7
	No	69	66.3	66.3	100.0
	Total	104	100.0	100.0	

Table 13.

Mania					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	18.3	18.3	18.3
	No	85	81.7	81.7	100.0
	Total	104	100.0	100.0	

Table 14.

Delusions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	20.2	20.2	20.2
	No	83	79.8	79.8	100.0
	Total	104	100.0	100.0	

Table 15.

Acne					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	42	40.4	40.4	40.4
	No	62	59.6	59.6	100.0
	Total	104	100.0	100.0	

Table 16.

Jaundice					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	26.9	26.9	26.9
	No	76	73.1	73.1	100.0
	Total	104	100.0	100.0	

Table 17.

Oily Scalp					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	26.0	26.0	26.0
	No	77	74.0	74.0	100.0
	Total	104	100.0	100.0	

Table 18.

Decrease in Semen Volume					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	25.0	25.0	25.0
	No	78	75.0	75.0	100.0
	Total	104	100.0	100.0	

Table 19.

Oligospermia					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	18.3	18.3	18.3
	No	85	81.7	81.7	100.0
	Total	104	100.0	100.0	

Table 20.

Azoospermia					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	17.3	17.3	17.3
	No	86	82.7	82.7	100.0
	Total	104	100.0	100.0	

Table 21.

Voice Deepening					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	14.4	14.4	14.4
	No	89	85.6	85.6	100.0
	Total	104	100.0	100.0	

Table 22.

Glucoma					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	17.3	17.3	17.3
	No	86	82.7	82.7	100.0
	Total	104	100.0	100.0	

Table 23.

Cataract					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	13.5	13.5	13.5
	No	90	86.5	86.5	100.0
	Total	104	100.0	100.0	

Table-24.

Delayed Wound Healing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	14.4	14.4	14.4
	No	89	85.6	85.6	100.0
	Total	104	100.0	100.0	

Table 25.

Osteoporosis					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	10.6	10.6	10.6
	No	93	89.4	89.4	100.0
	Total	104	100.0	100.0	

Table 26.

Ulcers in Stomach and Duodenum					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	19.2	19.2	19.2
	No	84	80.8	80.8	100.0
	Total	104	100.0	100.0	

Table 27.

Myocardial Hypertrophy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	11.5	11.5	11.5
	No	92	88.5	88.5	100.0
	Total	104	100.0	100.0	

Table 28.

Chronic Renal Failure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	22.1	22.1	22.1
	No	81	77.9	77.9	100.0
	Total	104	100.0	100.0	

Table 29.

Are you aware that steroids stacking is done by mixing two or more steroids?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	27.9	27.9	27.9
	No	75	72.1	72.1	100.0
	Total	104	100.0	100.0	

Table 30.

Do you know that a break is taken after taking steroids for a cycle of 4-15 weeks?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	17.3	17.3	17.3
	No	86	82.7	82.7	100.0
	Total	104	100.0	100.0	

Table 31.

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20 Years	3	18.8	18.8	18.8
	21-25 Years	11	68.8	68.8	87.5
	26-30 Years	2	12.5	12.5	100.0
	Total	16	100.0	100.0	

Table 32.

What is your route of intake of steroids?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Oral	10	62.5	62.5	62.5
	Injectables	3	18.8	18.8	81.3
	provide no information	3	18.8	18.8	100.0
	Total	16	100.0	100.0	

Table 33.

If you use injections then who administers them to you?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Friends	1	6.3	6.3	6.3
	Healthcae Staff	3	18.8	18.8	25.0
	Self-Administration	8	50.0	50.0	75.0
	Any Other	1	6.3	6.3	81.3
	provide no infomation	3	18.8	18.8	100.0
	Total	16	100.0	100.0	

Table 34.

Where do you get these steroids from?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gym Administration	5	31.3	31.3	31.3
	Local Stores	2	12.5	12.5	43.8
	Online Shopping	4	25.0	25.0	68.8
	provide no information	5	31.3	31.3	100.0
	Total	16	100.0	100.0	

DISCUSSION

Trend of usage of anabolic steroidal supplements is on the rise especially in the past few years particularly with amazing body shapes and patterns exhibited by various models and actors which target most of the younger generation among the population but in the urge to

achieve desirable results in the shortest amount of time possible they usually find themselves attracted to steroids and various other doping agents.

Overall the majorities of body builders was between the ages of 21-25 years and were yet completing their

studies. Most of them had education upto intermediate level and were unmarried. Interestingly majority of both abusers and non-abusers had no constant source of income. Prevalence of AAS consumption was almost 13.3% which is a lot higher as compared to the one found in a similar study conducted in Iran where it was found to be 7.2% among students with a history of professional athletic activity and 8.4% in students with a history of bodybuilding activity. The awareness rate among body builders didn't follow any specific pattern whether it was for attitude towards abusing, level of education, age group or occupation status and it was pretty low even for a few most common and notorious side effects like gynecomastia, testicular atrophy and oligospermia. Another interesting aspect was that almost 40% of people heard about steroids from their friends and major other sources were lame too but among the 16 abusers only 5(31.3%) of people consulted any physician for the prescription or advise. However, as expected a higher percentage of the abusers were aware of the concept of stacking 9 (56.3%) and cycling 7(43.8%) as compared to non-abusers for whom the figures were 29(27.9%) and 18(17.3%) for stacking and cycling respectively. The main route of intake was oral for 10(62.5%) of abusers and among those 6(37.5%) who used injectables, 5(83.3%) of them did self-administration. Finally gym administration was the major provider of steroids for 5(31.3%) of abusers. Other minor sources were local stores (2=12.5%) and online shopping (4=25%).

CONCLUSION AND RECOMMENDATION

Steroids, a renowned shortcut to strength and size, have a considerable number of side effects. Some of these have quite an impact and are notorious for that but there are still a huge number of effects about which masses have no or very little knowledge. Thus it is recommended that production, publicity and usage should be controlled by FDA and there should be proper legislation and licensing for doing business in these types of products.

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