

Comparison of body perception of bodybuilding athletes pre and post anabolic steroid cycle

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Summary. *Study Objectives:* This study aimed to compare the body perception levels of elite bodybuilders' pre and post steroid cycles. *Methods:* The experimental group consisted of 42 steroid-using bodybuilders who voluntarily agreed to participate in the study. Besides, the control group was formed by 22 people. Athletes in the control group did not use steroids. As a data collection tool, the Body Appreciation Scale was used. Two-way repeated measure analysis of variance, frequency analysis, and descriptive statistical analysis were used in the analysis of the data. *Results:* According to the statistical analysis results, it was determined that there was an increase in body discontent levels of athletes after steroid cure. *Conclusion:* It was revealed that the use of steroids increased the level of body discontent of athletes. To be healthier, it is better to have an active lifestyle (adequate exercise), healthy eating habits, and maintain a positive state of mind.

Key words: Body Perception, Bodybuilding, Anabolic Steroid.

Introduction

As a result of the literature review on the subject, it is understood that scientific studies showing the relationship between the level of narcissism and body perception of athletes have been conducted by researchers abroad. A popular research topic in the world, narcissism and body image in athletes has been neglected by researchers observed that in Turkey. Since the lack of a study in the Turkish literature reveals that the relationship between the level of narcissism and body perception of athletes is considered to be a negative situation for the Turkish literature, this negative situation will be tried to be eliminated with this study.

The concept of body perception was first addressed in 1920 by Paul Schilder as a psychological and sociological concept. Studies conducted before Schilder has limited to the impaired body perceptions that appeared as a result of brain damage. Schilder defines body perception as his picture that he has shaped in the mind of the human (1,2).

Body image disorder was first mentioned in the phantom organ case report of Ambroise Pare, a surgeon in the 16th century. Head, a neurologist in the 1920s, introduced the concept of body charts. Accordingly, the body chart is defined as "a whole composed of past experiences and present sensations that are mostly organized in the emotional cortex" (3).

Past experiences of the individual have an important place in the development of body perception. The reactions of the individual to his/her body in the past and the reactions of the individual to his/her body affect the development of the body perception of the individual. Body perception, which is generally perceived as positive, can have significant effects on an individual's self-esteem and self-confidence.

Many studies have revealed that sports contribute to the development of positive character and body perception in the individual (4). Sport can affect the body perception of females in many ways. The competitive environment in sports can encourage athletes to have a better body. Moreover, the sense of perfectionism that

emerges in sports can also affect the desire to have a beautiful body (5).

Ogden, Veale, and Summers (1997) have stated that exercise has a positive effect on body perception (6). As a result of the studies, it has revealed that regular exercises lead to a positive perception of appearance (7,8). Field et al. (2001), Ingledew, Hardy, and Sousa (1995) have stated that sports significantly affect the body perception of the individual (9,10). It has been emphasized that sports have a very important place in achieving the desired body shape, especially in adolescence. Cash, Novy and Grant (1994) McDonald and Thompson (1992), Smith, Handley, and Eldredge (1998), Deci and Ryan, (1991), and Tiggemann and Zaccardo (2015) have emphasized the importance of sports in the development of the individual's body perception (11-15). In a study conducted by Ingledew and Sullivan (2002), it has determined that sport has a great place in keeping individuals' weight under control and it has an important place in achieving the body perception desired by the individual (16). Henry et al. (2006) have stated that there was an improvement in body perception of women who participated in a 12-week exercise program. Individuals, participating in sports such as ballet and gymnastics, trigger body perception anxiety (17). In this context, this study aimed to compare the body perception levels of elite bodybuilders' pre and post steroid cycles.

Materials and Methods

Study group

The Study Group consisted of 42 elite bodybuilding athletes who voluntarily agree to participate in the study. The athletes who participated in the study applied Bulk Cure. Bulk Cure was a steroid cycle for up to 8 to 16 weeks. In this cycle, athletes used the following drugs; Testosterone, Enanthate, Deca, Boldenone, Trenbolone, Enanthate, Dianabol, Anadrol, etc. medicines. This cure aimed to completely enlarge the body and gain mass in volume. Depending on the use of medication, fat and water retention may be seen in the body. Moreover, the control group was formed of 22 people. Athletes in the control group did not use steroids.

Data Collection Tools

Body Appreciation Scale: The Body Appreciation Scale (BAS) was a scale developed by Tylka, & Wood-Barcalow (2015) (18). Its validity and reliability were made in 2015 by Anlı et al. The BAS, which was a 5-point Likert type measurement tool, consisted of 10 items. Item-total correlation coefficients of the scale ranged from 0.31 to 0.76 (19).

Statistical analysis

In this study, SPSS 24 package program was used to analyze the data. The "Kolmogorov-Smirnov" test was applied to determine whether the data had a normal distribution, and the "Levene's Test" test was applied to determine data homogeneity, and it was determined that the data had a homogeneous and normal distribution. Descriptive statistics of the obtained data were given as mean, standard deviation, percentage, and frequency. Besides, two-way repeated measure analysis of variance was used to determine the difference between body perception according to the time points (Pretest and Posttest) of the groups. Moreover, the percentage differences of time points according to the groups were calculated with the formula " $\% \Delta = (\text{Posttest} - \text{Pretest}) / \text{Pretest} * 100$ ". p was determined as <0.05 .

Results

When Table 1 was examined, it was determined that the pre-test and post-test means of bodybuilders differed statistically according to the measurement times ($F = 79.832$; $p < 0.001$). In addition, a statistically significant difference was found between the groups according to the use of cure ($F = 11.309$; $p < 0.001$). Moreover, it was determined that the interaction regarding body perception between groups and measurement times was statistically significant ($F = 83.478$; $p < 0.001$). According to these results, it was seen that the body perception means of bodybuilders using Bulk cure decreased by -9.55%. This result showed that the athletes using Bulk cure could not gain the desired body image.

Table 1. Comparison of body perception of bodybuilding athletes according to cure usage and measurement times

Groups/Times	N	Pre-test	Post-test	Total	%Δ	F	p
		$\bar{X} \pm S.D.$	$\bar{X} \pm S.D.$	$\bar{X} \pm S.D.$			
Experimental group	42	42.62±1.38	38.55±1.64	42.62±1.38	-9.55	11.309	0.001**
Control group	22	39.27±1.98	39.32±1.99	39.68±1.93	.13		
Total	66	41.47±2.26	38.81±1.79			Group x Time interaction	
		F= 79.832; p< 0.001**				F=83.478; p< 0.001**	

**p<0.001; SD: Standard deviation

Table 2. Frequency table showing the body perception expected by the athletes after the cycle

Variables	Frequency (f)	Percent (%)	Valid Percent
I could not reach	21	16,4	50,0
Partially reached	13	10,2	31,0
I reached	8	6,3	19,0

Twenty-one of the athletes stated that they could not reach the muscle mass they imagined, 13 of the athletes reached the muscle mass they had imagined partially, and 8 of them reached the muscle mass they had imagined (Table 2).

Discussion and Conclusion

As a result of the descriptive statistical analysis, it was determined that there was a decrease in the body perception scores of the athletes after steroid usage. When the body perception scores of the athletes before and after anabolic steroid usage were compared, a statistically significant difference was found. Based on these statistical data, it can be said that steroid use increases the level of body discontent of athletes. It was thought that one of the biggest reasons for the increase in body discontent among athletes using steroids may be due to the inability of athletes to reach the muscle mass and body they imagine in their minds. It was determined that their body perception means decreased by 9.55% and could not get the expected results. In a one-on-one interview with the athletes after the cycle, 21 athletes stated that they could not

reach the muscle mass they imagined, 13 athletes stated that they had partially reached the muscle mass they imagined, while 8 athletes stated that they reached the muscle mass they imagined. In the bilateral interviews, the athletes gave the following answers to the question of why they could not reach the desired muscle mass: We suspect that the drugs we use were not original, it was due to the insufficient training program, I applied because we could not eat enough. After the athletes said that the drugs they used could be fake, the athletes were asked whether they took the steroids they used with a prescription under the doctor's supervision. To this question, all the athletes participating in the study stated that they took their medication without a prescription. Since steroid cures applied to increase muscle mass did not create the expected effect at the end of the cycle, they caused psychological damage in athletes. One of the factors affecting body discontent in athletes was that the athlete, who could not achieve the expected increase in muscle mass, could not get enough positive feedback from his/her social environment. Many studies revealed that professional athletes had a high level of body discontent. The biggest reason for this stemmed from the social environment. Because the athlete had to reach the ideal body that the social environment expects from him (20). As a result of the literature review, studies that were in parallel with the data of the study and that contradict were encountered. Some of these studies were given below:

Blouin and Goldfield (1995) compared the body discontent of male bodybuilders who used doping with those who did not use it and those in other branches, and at the end of their study, it was found that athletes using doping had higher levels of body discontent (21). Hildebrandt and Lai (2011) stated that one of

the important causes of body and muscle discontent was steroid usage (22). Cole et al. (2003) stated that body discontent in athletes caused by the usage of anabolic steroids (23). Peters and Phelps (2001) examined the effects of gender and steroid use on body dissatisfaction in bodybuilding athletes in their studies (24). As a result of the research, it was reported that female athletes perceive themselves as less muscular than they were, both male and female athletes experienced body dissatisfaction and whether steroid usage was related to body dissatisfaction. Although the results of the research are not related to weakness, it shows that athletes may experience body dissatisfaction and perceive themselves more biased than they are. Pickett, Lewis, and Cash (2005), in a study examining muscle and body image in males, determined that elite and amateur bodybuilders had more appearance evaluation scores than other active individuals (25). Chan and Owens (2006) and Pearson and Gleaves (2006) stated that there was a relationship between negative perfectionism and body discontent (26,27). Schwerin et al. (1996) stated that bodybuilders using doping had more positive attitudes towards their bodies than those who did not (28). Brower et al. (1994) found in their study that weightlifters who use doping were more satisfied with their physique than those who did not (29). Komorski and Rickert (1992) found that students using bodybuilding doping were more satisfied with their physique than students who did not (30). Tazegül (2016) was stated that body perception score of bodybuilders competing in 60 kg and under, 61-65 kg, 66-70 kg, 71-75 kg, 76-80 kg, 81-85 kg and 85-90 kg was 78.29, 77.21, 80.20, 88.67, 88.44, 80.75 and 73.00; respectively (31).

As a result, it was revealed that the usage of steroids increased the level of body discontent of athletes. The inability of athletes to achieve the bodily appearance they imagine in their minds was considered as one of the important reasons for this result. It was not right to consume nutritional supplements just to take supplements without considering the need. Even natural foods can cause unwanted side effects when taken in high doses. To be healthier, it is better to have an active lifestyle (adequate exercise), healthy eating habits, and maintain a positive state of mind.

In the literature, studies were showing that steroid usage increased body discontent, and studies were showing that steroid usage increased body satisfaction. It was emphasized that this difference may have resulted from the fact that a group of athletes achieved the body appearance they expected due to steroid usage, and a group of athletes could not achieve the body appearance they expected due to steroid use.

The taken supplements were steps taken for the health of body, mind, and spirit. If necessary, dietary supplements can be taken under special conditions with the advice of a specialist. However, the best way, for now, is to take protein or other nutrients naturally with a balanced and healthy diet and make all healthy habits a lifestyle.

Conflicts of interest: The authors declare that there is no conflict of interest in this manuscript.

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