



RESEARCH ARTICLE / ARAŞTIRMA YAZISI

# Body Image, Muscle Dysmorphia and Narcissistic Characteristics of Bodybuilder Males in TRNC

## KKTC'de Vücut Geliştiren Erkeklerin Beden İmajı, Kas Dismorfisi ve Narsisistik Özellikleri

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### Abstract:

Bodybuilding is one of the sport activities that is identified with masculinity and include several characteristics such as being muscular, enlarged physical appearance, and being strong and competent. The aim of this study is to examine muscle dysmorphic disorder, narcissistic personality traits and body image disorder in male bodybuilders in TRNC. 63 body-builder and 65 sedentary male individuals participated in the study. In this research, personal information form, MDI, NPI and BIS were employed. One of the findings obtained in this study is that the scores obtained by male bodybuilders from MDI in total and from BIS, AI and FI sub-dimensions show statistically significant difference from sedentary individuals ( $p < 0.05$ ). Another result of the study was that the scores obtained by the bodybuilders from the BIS significantly predicted the BIS, AI and FI scores in the MDI ( $p < 0.05$ ). Conclusions: The study findings indicates that, as the desire to become more muscular and stronger increases, the degree of positive perception of the body decreases, and there is a relationship between bodybuilders' physical dissatisfaction and their physical appearance. As a result of this finding, it can be said that individuals who become bodybuilders turn to bodybuilding sport as a result of this dissatisfaction. In addition, it can be said that the body dissatisfaction of bodybuilder's, is a factor that can be associated with MD development, and that they turn to bodybuilding sports so that they can have the body that they desire.

**Keywords:** Body-Building, Muscle Dysmorphia, Narcissistics Personality Traits, Body Image

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**Öz:**

Son dönemde erkek bireyler tarafından en fazla ilgi gösterilen spor dallarından bir tanesi vücut geliştirmedir. Vücut geliştirme erkeklikle özdeşleşen, kaslı olma, fiziksel görünümün büyümesi, güçlü ve yetkin olma gibi birçok özelliği içeren spor etkinliklerinden bir tanesidir. Bu çalışma KKTC, erkek vücut geliştiricilerde kas algısı bozukluğu, narsisistik kişilik özellikleri ve beden algısı bozukluğunu incelemek amacı ile yapılmıştır. Araştırmaya 63 vücut geliştiren ve 65 sedanter erkek birey katılmıştır. Çalışmanın verileri Kişisel Bilgi Formu, KAB-E, NKE ve BAÖ kullanılarak toplanmıştır. Çalışma bulguları erkek vücut geliştiricilerin KAB-E toplam puanının ve envanterin BAÖ, Gİ ve İB alt boyutlarından aldıkları puanların sedanter bireylerden istatistiksel olarak anlamlı farklılık olduğunu göstermektedir. Araştırmanın bir diğer bulgusu, vücut geliştiricilerin NKE aldıkları puanların ve BAÖ puanlarının sedanter bireylere göre istatistiksel olarak anlamlı farklılık olduğunu göstermektedir. Çalışmanın dikkat çekici bir başka sonucu ise vücut geliştiren bireylerin BAÖ'nden aldıkları puanların KAB'nde yer alan BÖA, Gİ ve İB puanlarını anlamlı düzeyde yordadığı tespit edilmiştir. Çalışma bulguları daha kaslı ve güçlü olma arzusu arttıkça bedenini olumlu algılama derecesi azalmadığını, vücut geliştirenlerin beden memnuniyetsizliği ile fiziksel görünüşleri arasında ilişki olduğunu göstermektedir. Bir başka anlatımla sedanter bireyler beden algılarından memnunken vücut geliştirenlerin beden algıları ile ilgili memnuniyetsizliği vardır. Bu bulgu sonucunda vücut geliştiren bireylerin bu memnuniyetsizlik sonucunda vücut geliştirme sporuna yönelindikleri söylenebilir. Ayrıca vücut geliştiren erkeklerin beden memnuniyetsizliği ile KAB'nun ilişkili olabileceği ayrıca beden memnuniyetsizliğinin KAB gelişimini etkileyebilecek bir etken olduğu, arzuladıkları ideal bedene sahip olabilmek için de vücut geliştirme sporuna yönelindikleri söylenebilir.

**Anahtar kelimeler:** Vücut Geliştirme, Kas Algısı Bozukluğu, Narsisistik Kişilik Özelliği, Beden Algısı

**Introduction**

Interest in bodybuilding sports is increasing on a daily basis. It is thought that the people who are interested in this branch of sports are interested with the aim of creating a more muscular, larger and stronger physical structure as well as obtaining a more aesthetic body shape. Several studies indicate that people interested in bodybuilding care about their appearance and strive to have a good physical appearance (Tazegül & Güven, 2015). The main goal in bodybuilding is to have a symmetrical physical image that displays muscle size (Ploeg, 2001). Bodybuilding athletes strive to have more muscle and less fat mass with the desire to become muscular and are engaged in an intense effort to increase their existing muscle mass. The desire to be muscular is thought to be a factor that can cause Muscle dysmorphia (MD). Therefore, bodybuilding sports is one of the sports branches dominated by males who tries to increase their muscle mass (Cafri, 2005).

*The readiness to be muscular and lean reveals a new disorder related to the image of the body, which primarily affects men (Mosley, 2009). MD was first named in 1993 as 'Opposed Anorexia Nervosa' by Pope, Katz and Hudson, and later renamed as MD by Pope, Katz and Hudson (2005). MD is characterized by the interpretation of the body size as small and weak, although it has a normal or muscular appearance, and is the misperception of the body image (Foster, Shorter, Griffiths & Griffiths, 2015). Although these people are actually big in size and muscular in physical structure (Karamustafalıoğlu and Karamustafalıoğlu, 2000), they try to high levels of fat loss and muscle gain (Pope, Pope, William, Fay, Olivardia & Phillips, 2005). In other words, MD is a pathological anxiety caused by the perception of the body due to the inability of the person to perceive his body having adequate muscle or fat (Olivardia, 2001; Pope, Gruber, Choi, Olivardia & Phillips, 1997). Although MD is included in the Body Dysmorphia Disorder (BDD) in DSM-V (Köroğlu, 2014), there is still no consensus on which of these disorders*

should still be present, since the disorder has similar symptoms with Obsessive Compulsive Disorder and Eating Disorders (Foster, Shorter, Griffiths & Griffiths, 2015, Murray, Reieger, Touyz & Touyz, 2010, Grieve, 2007). In DSM-V, this disorder is described under BDD as, "Type with Muscle Dysmorphia: The person is struggling with the idea that his/her body structure is too small or not muscular enough. This determinant is used even though the person has intellectual efforts related to other body parts, as is often the case" (DSM-V, 2014).

BDD is a condition in which person is preoccupied with a body defect that does not exist but thinks that it exists or that he/she excessively exaggerating an actual body defect (Ray, Demirkol & Tamam, 2012; Öztürk & Ulusahin 2011, Sungur, 1999). The main symptom of this disorder is that although the person has a normal appearance, he/she has over-evaluated thoughts about body formlessness that he/she believes to exist (Öztürk & Ulusahin, 2011). This causes decreased functionality, as well as behaviors such as restriction and avoidance in their social relationships (Aslan, 2000; Sungur, 1999).

In Narcissistic Personality Disorder (NPD), the person has the feeling that he/she is important, superior and unmatched, and besides having a need for appreciation, he/she also lacks the ability to empathize (Bender, 2012; Ronningstam, 2010; Ozan, Kırkpınar, Aydın ve Fidan; 2008). NPD is a personality pattern that starts in the early adulthood and when a person experiences a sense of arrogance in various areas of his/her life (Köroğlu, 2014). These people are physically and mentally admired, believe that they are superior, expect appreciation, attention and approval from others, and believe that they will receive special attention and deserve a superior place in every social setting they participate in. Their self-esteem depends on approval, interest and appreciation from others. If these expectations are not met, their self-esteem is bound to decrease (Öztürk & Ulusahin, 2011). The importance that narcissists give to their appearance is supported by several studies (Tazegül & Güven, 2015).

Dealing with muscularity in different studies has been examined in terms of both prevalence and relationship with BDD (Frederick, Fesler & Haselton, 2005; McCreary & Sasse, 2000). It has been suggested that BDD in males is linked to two factors: the desire to increase muscle, and reduce fat (Santarnecchi, Dettore, 2012). The driving force behind the development of MD is body dissatisfaction. The dissatisfaction of the person increases the chance of developing this disorder (Grieve, 2007). Studies show that doing sports causes or affects the development of MD and eating disorders in males (Baum, 2006). Body image is about body satisfaction or dissatisfaction. This situation arises as a result of the harmony or incompatibility between the perceived body image and the self-image and the internalized body image (Silva, Da.Silva & Gonçalves, 2015).

Bodybuilding is a branch of sports through which people pay effort to develop their muscles and increase their muscle mass to shape their body (Stoviks, 2006) and are focused on having a muscular physical appearance (Hallsworth, Wade & Tiggeman, 2005). With this sport, efforts are made to display muscle size (Ploeg, et al., 2001), to have more muscle and less fat mass, or to increase the existing muscle mass (Cafri, 2005). Bodybuilding differs from other weight lifting disciplines due to its aesthetic quality. Although there are female bodybuilders, it is one of the sports activities primarily dominated by men (Mosley, 2009). The reason for which bodybuilding is primarily dominated by males is that it is a kind of sports through which developed arm muscles and chests, and shoulders which become tighter and narrower towards the waist can be acquired, all of which are the characteristics of a body-type mainly identified with males. This body type also represents features such as strength, power, and competence that are also identified with masculinity (Mishkind, Rodin, Silberstein, Striegel-Moore, 1986). This sports branch expresses a socio-culturally ideal body shape especially for men (Andersen, Barlett, Morgan and Brownell, 1995).

The aim of this study is to determine the muscle dysmorphia, narcissistic characteristics and body satisfaction of men who are engaged in bodybuilding sports in the Turkish Republic of Northern Cyprus (TRNC), as well as to examine whether the muscle dysmorphia meets the diagnostic criteria.

## Method

In the study, data were collected from 70 bodybuilder males at and over the age of 18 who dealt with bodybuilding sports actively for at least one year and 70 sedentary males who did not deal with any kind of sports. After data-clearance, the data of 63 body-builder and 65 sedentary individuals were evaluated by Statistical Package for Social Sciences (SPSS) 24.0 ve AMOS 21.0. The age of bodybuilder males varied between  $\bar{x}=26.60\pm 4.40$  and the age of sedentary males varied between  $\bar{x}=22.71\pm 2.08$ . Data collection tools were applied to bodybuilders by visiting them at the gyms operating in Nicosia and to the participants in sedentary group by applying the data collection tools in Nicosia. The participants were included in the research based on their volunteerism.

## Measures

**Personal Information Form:** Includes questions to collect information about the participants in terms of their

age, education, duration of dealing with bodybuilding sport, and when they started bodybuilding sport.

**Narcissistic Personality Inventory (NPI):** NPI, which was used in order to measure the narcissistic personality traits of participants, was developed by Raskin and Hall (1979). Raskin and Terry developed the 40-question NPI by reviewing the scale in 1988. Later, NPI-40 was revised by Ames et al. (2006) and restructured so as to include 6 factors consist of 16 questions. The average internal reliability of the scale was determined as 0.67. In the NPI-16 adaptation conducted by Güngör and Selçuk (2015), Cronbach's Alpha value increased to 0.7439. The scale consists of 16 items and 6 factors. The points that can be obtained from the scale are minimum 0 and maximum 16. Each item has two options, a and b. Only one of the a and b options can be marked in each item. If the selected item is narcissistic, 1 point is given; if it is not, 0 points are given. While high scores indicate the high narcissistic tendency, low scores indicate that the narcissistic tendency is low.

**Muscle Dysmorphic Disorder Inventory (MDI):** It was developed by Hildebrandt, Langenbucher, Schlundt (2004) to measure the diagnostic criteria and emotional, cognitive, behavioral and perceptual dimensions of muscle dysmorphia. Inventory is a 13-item, 5-point Likert type self-report scale. MDI has three sub-dimensions. The Desire for Size (DFS) sub-dimensions includes questions that try to find out opinions about being smaller, less muscular, less powerful than desired, or increasing physical size and strength. The Appearance Intolerance (AI) sub-dimension includes questions about the people's negative beliefs of their body and the resulting apprehension and avoidance of showing their body. The Functional Impairment (FI) sub-dimension includes maintaining conventional exercise behaviors, interfering with negative emotions when deviating from conventional exercise behaviors, or avoiding social environments due to negative emotions and dealing with one's body. The Cronbach's Alpha value of the DFS sub-dimension was found as 0.85, the Cronbach's Alpha value of the AI sub-dimension was found as 0.77, the Cronbach's Alpha value of the FI sub-dimension was found as 0.88 and the MDI total Cronbach's Alpha value was found as 0.81. Adaptation of the inventory to Turkish was performed by Subaşı, Okray and Çakıcı (2018). As a result of the adaptation study, the scale has preserved its original structure. The Cronbach's Alpha value of the DFS sub-dimension was found as 0.85, the Cronbach's Alpha value of the AI sub-dimension was found as 0.77, the Cronbach's Alpha value of the FI sub-dimension was found as 0.88 and the MDI total Cronbach's Alpha value was found as 0.81.

**Body Image Scale (BIS):** It was developed by Secord and Jourard (1953) and adapted to Turkish by Hovardaoğlu (1992). The purpose of developing the scale was to test the hypothesis that the satisfaction provided by people from their bodies was related to self-concepts. BIS, which is a one-dimensional scale, is a 40-item, 5-point Likert type self-report scale. The lowest score that can be obtained from the scale is 40, and the highest score is 200. The increase in the score obtained from the scale means an increase in the positive evaluation of the body. In the Turkish adaptation study of the Body Image Scale, the internal consistency coefficient was found to be 0.95.

**Results**

It was found out that males who performed bodybuilding received  $\bar{x}=13.22\pm4.67$  points from DFS sub-dimension,  $\bar{x} = 7.40\pm3.29$  points from AI sub-dimension,  $\bar{x}=11.19\pm4.58$  points from FI sub-dimension of the MDI,  $\bar{x} =31.81\pm9.41$  points from MDI in general,  $\bar{x}=164.51\pm24.12$  points from BIS, and  $\bar{x} =9.49\pm2.02$  points from NPI. It was determined that sedentary

individuals received  $\bar{x}=9.62\pm4.03$  points from DFS sub-dimension,  $\bar{x}= 7.37\pm3.10$  points from AI sub-dimension,  $\bar{x}=7.03\pm3.21$  points from FI sub-dimension of the MDI,  $\bar{x} =24.02\pm6.76$  points from MDI in general,  $\bar{x} =156.20\pm21.78$  points from BIS, and  $\bar{x} =8.66\pm1.53$  points from NPI.

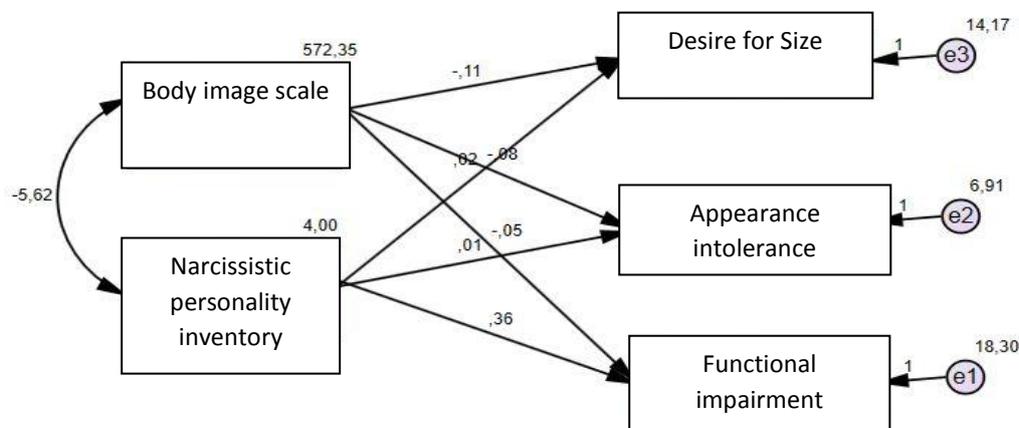
**Table 1.** Comparison of the scores obtained by body-building and sedentary individuals from MD, BIS and NPI

	Status of doing sports	n	x	s	M	Mean rank	Z	p
MDI total	Bodybuilding	63	31.81	9.41	31.00	81.40	-5.081	0.000*
	Sedentary	65	24.02	6.76	23.00	48.12		
DFS	Bodybuilding	63	13.22	4.67	13.00	79.40	-4.490	0.000*
	Sedentary	65	9.62	4.03	8.00	50.05		
AI	Bodybuilding	63	7.40	3.29	6.00	63.94	-0.171	0.864
	Sedentary	65	7.37	3.10	7.00	65.05		
FI	Bodybuilding	63	11.19	4.58	12.00	81.71	-5.218	0.000*
	Sedentary	65	7.03	3.21	6.00	47.82		
BIS	Bodybuilding	63	164.51	24.12	169.00	71.91	-2.226	0.026*
	Sedentary	65	156.20	21.78	156.00	57.32		
NPI	Bodybuilding	63	9.49	2.02	9.00	72.48	-2.435	0.015*
	Sedentary	65	8.66	1.53	9.00	56.77		

\* $p<0,05$

When the average scores obtained by bodybuilding and sedentary individuals are compared, it was seen that bodybuilding individuals received  $\bar{x}=13.22\pm4.67$  points from DFS sub-dimension of MDI whereas sedentary individuals received  $\bar{x}=9.62\pm4.03$  points and that the difference was statistically significant ( $p<0.05$ ). The scores of bodybuilding individuals from the DFS sub-dimension were found to be significantly higher than that of sedentary individuals. It was found that there was no statistically significant difference between the scores of bodybuilding and sedentary individuals in the AI sub-dimension in the MDI ( $p> 0.05$ ). The scores of bodybuilding and sedentary individuals in the AI sub-dimension are similar. Bodybuilding individuals received  $\bar{x}=11,19\pm4,58$  points from FI sub-dimension of MDI whereas sedentary individuals received  $\bar{x} =7.03\pm3.21$  points. It was found out that there was statistically significant difference between scores, and that the scores obtained by bodybuilding individuals from this sub-dimension were significantly higher compared to

sedentary individuals. It was determined that the scores obtained from the MDI in general by the participants showed significant difference ( $p<0.05$ ), where bodybuilding individuals ( $\bar{x} =31.81\pm9.41$ ) received significantly higher scores compared to sedentary individuals ( $\bar{x}=156.20\pm21.78$ ) from the MDI in general. Bodybuilding individuals received  $\bar{x} =164.51\pm24.12$  points from BIS whereas sedentary individuals received  $\bar{x} =156.20\pm21.78$  points. It was determined that the difference between the points received by the participants from the BIS was statistically significant ( $p <0.05$ ). BIS scores of bodybuilding individuals were found to be significantly higher than sedentary individuals. Bodybuilding individuals received  $\bar{x}=9.49\pm2.02$  points from NPI whereas sedentary individuals received  $\bar{x}=8.66\pm1.53$  points. It was found that there was a statistically significant difference between the scores of bodybuilding and sedentary individuals from the NPI ( $p <0.05$ ). The scores of bodybuilders from inventory were higher than those of sedentary individuals.



**Figure I.** Path diagram of the model established on the effect of Body Image and Narcissistic personality traits of Bodybuilders on MDI

A structural equation model has been established indicating that body image and narcissistic personality traits of bodybuilders affect MDI (Figure I). When the goodness of fit values of the model established as regards the goodness of fit indexes of the model and the impact of body images and narcissistic personality traits on MDI, DFS, AI and FI values were examined, it was found out that the calculated  $\chi^2/sd$  (chi-square / degree of freedom) was 1.92. Accordingly, it was seen that there is an excellent match between the calculated value matrix of the original variable and the proposed matrix. The Root

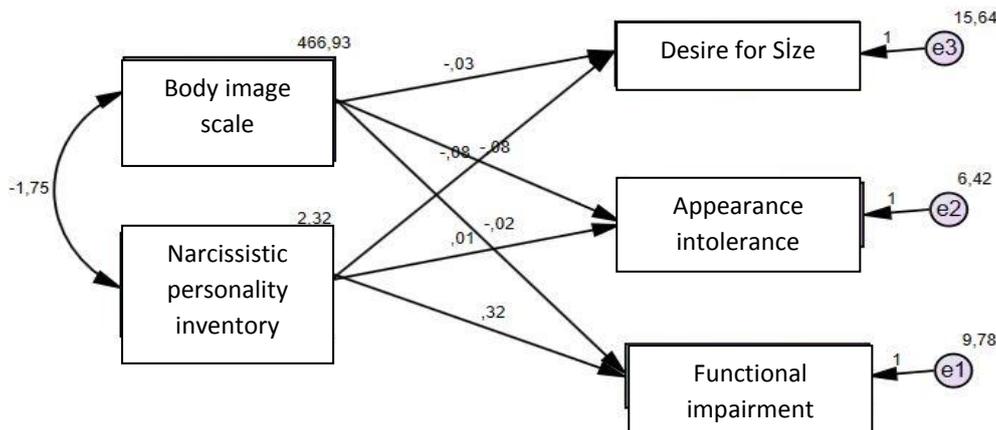
mean square error of approximation (RMSEA) value was found to be 0.078, accordingly, it was found to have acceptable compliance with the RMSEA. The NFI value was found to be 0.91, which indicates that the model has acceptable fit. Comparative fit index (CFI) value of the model was found to be 0.951. The calculated CFI value is 0.951 and the model has been found to have excellent fit. The Goodness Fit Index Value (GFI) of the model was calculated as 0.965. This shows that the model has an excellent fit

**Table 2.** Regression coefficients of the model that examines the effect of body image and narcissistic personality traits of bodybuilding individuals on MDI.

			B	S.H	C.R.	p
Desire for Size	<---	NPI	0.02	0.24	0.09	0.933
Appearance intolerance	<---	NPI	0.01	0.17	0.08	0.939
Functional impairment	<---	NPI	0.36	0.27	1.33	0.183
Desire for Size	<---	BIS	-0.11	0.02	-5.62	0.000*
Appearance intolerance	<---	BIS	-0.08	0.01	-5.72	0.000*
Functional impairment	<---	BIS	-0.05	0.02	-2.28	0.023*

When Table 2 is examined, it was found that the scores of bodybuilding individuals included in the study did not significantly predict the scores of DFS, AI and FI in the MDI ( $p > 0.05$ ). It was determined that the scores of bodybuilders from the BIS significantly predicted the

DFS, AI and FI scores in the MDI ( $p < 0.05$ ). Accordingly, the increase in the scores obtained by bodybuilders from the BIS by 1 unit decreases the DFS scores by 0.11 units, the AI scores by 0.08 units and the FI scores by 0.05 units.



**Figure II.** Path diagram related to the model established on the effect of Body Image and Narcissistic Personality Traits of Sedentary individuals on MDI

A structural equation model has been established indicating that the body images and narcissistic personality traits of sedentary individuals affect MDI (Figure II). When the goodness of fit indexes of the established model is examined, it is seen that  $\chi^2/sd$  (chi-square / degree of freedom) was 1.083, Root mean square error of approximation (RMSEA) was 0.036, Normed Fit Index (NFI) was 0.898, Comparative Fit Index (CFI) was

0.989 and Goodness Fit Index (GFI) was 0.980. In line with these results, it was found that all the goodness of fit indices except NFI belonging to the model, in which the effect of Sense of Sedentary Individuals, Body image and Narcissistic Personality Traits, were found to be excellent, and it was determined that the established model is able to test the effect of Sedentary Individuals on Body Image and Narcissistic Personality Traits.

**Table 3.** Regression coefficients of the model that examines the effect of body image and narcissistic personality traits of bodybuilding individuals on the MDI

			B	S.H	C.R.	p
Desire for Size	<---	NPI	-0.08	0.32	-0.26	0.796
Appearance intolerance	<---	NPI	0.07	0.21	0.03	0.974
Functional impairment	<---	NPI	0.31	0.26	1.23	0.217
Desire for Size	<---	BIS	-0.28	0.02	-1.24	0.215
Appearance intolerance	<---	BIS	-0.08	0.01	-5.46	0.000*
Functional impairment	<---	BIS	-0.02	0.02	-0.89	0.372

When Table 3. is examined, it can be determined that the scores obtained by the sedentary individuals from the Narcissistic Personality Traits Inventory do not significantly predict the BIA, AI and FI scores in the MDI ( $p > 0.05$ ). While it was determined that the scores obtained by the sedentary individuals from the BIS did not significantly predict the DFS and FI scores in the MDI ( $p > 0.05$ ), it was found out that they significantly predicted the AI scores ( $p < 0.05$ ). Increasing the scores of sedentary individuals from the BIS by 1 unit decreases the AI scores in the MDI by 0.08 units.

## Discussion

In this study, a strong negative relation was found between body image and body desires of bodybuilding men. This finding is compatible with the literature. In other words, inadequate perception of physical size and strength is negatively related to body satisfaction. As one's desire to become more muscular and stronger increases, the degree of positive perception of his body decreases. According to the results of the study, it is believed that there is an inconsistency between the real bodies of individuals and their perceived bodies in MD, and this inconsistency leads to body dissatisfaction. Studies conducted in recent years emphasize that male dissatisfaction increases, and the nature of this dissatisfaction is related to being larger and more muscular. A study conducted in Austria, France and the United States found that men's perceived bodies are more muscular than their real bodies, and this inconsistency in their perceptions is a factor that could contribute to the development of MD (Perugi, 1997). In a study conducted by Hallsworth, Wade, and Tiggemann (2005), it was found that the body dissatisfaction and the desire to be muscular were significantly higher among bodybuilding men than weightlifters and psychology students who did not deal with any of these sports. Similarly, in the study conducted by Tathses (2016), it was found that people who regularly go to the gym are more dissatisfied than those who do not go to the gym regularly. In the literature, it is stated that men, who are sensitive to MD (Cafri, Thompson, Ricciardelli, McCabe, Smolak & Yesalis, 2005) and who have the nature of excessive desire to be muscular, try to change their body image by increasing their muscles (McCabe & Ricciardelli, 2001).

Bodybuilding (Furnham & Calnan, 1998), which is the type of exercise where men can form the ideal body shape, is one of the most popular sports. It is stated that with the increasing interest in bodybuilding sports, an increasing number of young men are dissatisfied with their physical appearance (Pope, Phillips & Olivardia, 2000). Athletes interested in any sport are more susceptible to developing Body image Disorder due to social pressure towards having a more muscular but less fatty body structure (Leone, Sedory & Gray, 2005). It is stated in the study conducted by Mosley (2009) that MD firstly emerged as a disorder affecting bodybuilders. *In this study, it was determined that the total score of the bodybuilding men received from MD was higher than the sedentary males. As a result of this finding, it was concluded that male bodybuilders' MD symptoms were higher than sedentary individuals. The fact that symptoms of MD in the bodybuilding group are more common is due to the fact that the disorder primarily affected these individuals. It can be said that individuals who are interested in bodybuilding try to construct their bodies in*

*a more pleasing shape by doing weight lifting exercises to increase their body satisfaction; in other words, they are trying to build a new body shape.*

Negative body image is a concept that includes the person's feelings and thoughts about body or any body region, the shame and discomfort feels about body, feeling less self-appealing than others, and feelings and thoughts (Bergeron, 2007). Peters (1998) states that bodybuilders turn to this sport because of their negative body images. According to Blouin and Goldfield (1995), people with low body image and dissatisfaction with their physical appearance tend to perform bodybuilding in order to have a more attractive physical appearance. Physical activities increase self-esteem, but activities performed with the desire to create the ideal body shape cause body dissatisfaction (Tiggemann, 1992). The desire to be muscular can lead to MD (Cafri, 2005) and being muscular constitutes an important dimension of body image among men (Olivardia, 2004). Considering this dimension of body image for men, it is thought that not being muscular enough or under-perceiving the existing muscle ratio may cause body dissatisfaction (Pope & Katz, 1994).

Bodybuilding is believed to be an area where people can create the ideal body shape that is acceptable for himself. Another conclusion of this study is that as the negative beliefs of bodybuilding male athletes regarding their body and the resulting appearance anxiety as well as tendency to avoid showing their body increase, their body dissatisfaction decreases. In other words, it was concluded that there is a relationship between body dissatisfaction and their physical appearance. Another remarkable finding of the study is that the BIS scores of bodybuilding individuals are significantly higher than sedentary individuals. In other words, while sedentary individuals are satisfied with their body images, individuals who develop their body have dissatisfaction with their body images. As a result of this finding, it can be said that individuals who develop bodybuilders turn to bodybuilding sport as a result of this dissatisfaction.

Low body satisfaction is thought to be the driving force behind the development of MD. There are two main reasons that reveal body dissatisfaction. These are the person being overweight or obese and wanting to lose weight, or being thinner than normal and wanting to gain weight (Furnham & Calnan, 1998). Dissatisfaction with the person's body increases the chance of developing MD (Grieve, 2007). In addition, it is known that the desire to be muscular can lead to MD, too (Cafri, 2005). People with MD perceive their bodies smaller than their actual size (Olivardia, 2001). As the male body is becoming more visible, the interest in physical exercises is increasing. It is stated that physical exercises focused primarily on physical appearance such as weight exercises have negative results on MD (Choi, Pope & Olivardia, 2002). In the study conducted by Baum (2006), it is stated that doing sports may lead to MD in a similar way. In our study, it was determined that body satisfaction decreases with increasing symptoms of MD, which is consistent with the literature. Within the framework of this finding, it can be said that body dissatisfaction and MD may be related, and that body dissatisfaction is a factor that can affect the development of MD and that people tend to perform bodybuilding sports in order to have the ideal body that they desire.

Another remarkable finding of the study is that the DFS scores of bodybuilding individuals were significantly higher than sedentary individuals. This finding shows that while bodybuilders have negative beliefs about their bodies, sedentary individuals do not have such beliefs. In addition, the points that bodybuilders received from the FI sub-dimension were found to be significantly higher than sedentary individuals. As a result of this finding, it can be claimed that bodybuilding individuals make efforts to maintain their usual exercise behavior, have negative emotions when they deviate from these behaviors, and avoid social environments because they devote their time to dealing with their bodies, but sedentary individuals do not experience these problems. This study is the first in its field. Similar findings could not be obtained as a result of the literature review.

Bodybuilding is one of the sports that people strive to look more aesthetic and beautiful. In the study conducted by Tazegül ve Güven (2015) to compare the narcissism levels of bodybuilding athletes and athletes of different sports as well as people who do not engage in any kind of sports, it was determined that the narcissistic characteristics of individuals engaged in bodybuilding sport were more noticeable than other groups. In addition, it is stated that the physical appearance of people who are engaged in bodybuilding sport may be a factor in the development of narcissism levels. In a study by Carroll (1989), it was revealed that the score of athletes doing bodybuilding sports from the inventory of narcissism was significantly higher than those of athletics and psychology students. This result is an indication that the narcissistic properties of athletes who are interested in bodybuilding sports are more than those who are interested in other sports. Research has revealed that athletes interested in bodybuilding sport are obsessively concerned with their physical appearance. Within the framework of this finding, it can be thought that this mindset may be a predictive factor in the development of the narcissistic characteristics of individuals (Tazegül & Güven, 2015). Dettore, Fabris, Santarecchi (2020) suggested that potential interaction between MD symptoms and narcissism with a stronger association between narcissistic traits and the development of more severe MD conditions in competing bodybuilders. Similarly, in this study, NPI scores of bodybuilding individuals were found to be significantly higher than sedentary individuals.

Back (2011), Vazire (2008) state that an individual's excessive physical appearance may increase the level of narcissistic behavior. In the study conducted by Polat and Şimşek (2015) with the aim of examining the exercise dependence levels of the people who went to the gyms, it was determined that the bodybuilding sport was the most popular type of sport in the sample group. In addition, it is stated that the aesthetic concerns of the young participants was the main reason of this situation. Bodybuilding athletes are obsessively concerned with their physical appearance (Tazegül & Güven, 2015). In this study, a positive relationship was found between FI and NPI. FI sub-dimension of MD involves maintaining the usual exercise behavior, interfering with negative emotions when deviating from the usual exercise

behavior, or escaping from social environments due to negative emotions and spending too much time with the body. Considering that dealing with excessive physical appearance can improve narcissistic properties, this finding is consistent with the literature. In other words, it is believed that the bodybuilders' exercise of their physical appearance and engagement with their bodies are related to their narcissistic characteristics.

## Results

In this study, effort is made to examine the Body Image Disorder, Muscle Dysmorphia, and Narcissistic Personality Traits of bodybuilding males.

The findings of the study show that the narcissistic traits and MD symptoms of the bodybuilding males are higher than those of the sedentary males, and that their Body Images are more distorted. In line with these findings, it is seen that MD is primarily a disorder affecting bodybuilding men, that sedentary individuals are satisfied with their body image, and that bodybuilding individuals experience dissatisfaction with their body image. Another remarkable finding of the study is that body dissatisfaction is a factor predicting the development of MD.

This is the first study in its field. In this study, it is aimed to contribute to research on body image and masculinity. More research is needed to reveal how body image and masculinity are built in different areas. In addition, it is thought that studies on obsessive-compulsive behaviors of this group are needed. Such studies will enrich the literature.

It is thought that the inclusion of female bodybuilders in the sample in further similar studies may reveal what it means for them to build a new body for female bodybuilders and their perceptions about their body. It is believed that such a study will enrich the literature.

## Declarations

### Ethics Approval and Consent to Participate

Informed consent was obtained from all participants who agreed to participate in the study. YDÜ/SB/2018/137 (Yakın Doğu Üniversitesi, Sosyal Bilimler) numbered ethics committee approved taken from the Near East University Institute of Social Sciences in 06/04/2018.

### Consent for Publication

Not applicable.

### Availability of Data and Materials

Data sets used and / or analyzed during the study can be obtained from the relevant author upon appropriate request.

### Competing Interests

The authors declare that there is no conflict of interest.

### Funding

Not applicable.

### Authors' Contributions

BH analyzed and interpreted the data and ZO contributed to the writing of the article. All authors have read and approved the final version of the article.

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## References

- Ames, D. R., Rose, P. & Anderson, C. P. (2006). The NPI-16 As a Short Measure of Narcissism. *Journal of Research in Personality*, 40, 440-450.
- Andersen, R. E., Barlett, S. J., Morgan, G. D. & Brownell, K. D. (1995). Weight loss, psychological, and nutritional patterns in competitive male body builders. *Int J Eat Disorder* (18), 49-57.
- Aslan, H. (2000). Beden Dismorfik Bozukluğu: Bir Gözden Geçirme. *Düşünen Adam*, 13,33-41.
- Back M. D., Penke L., Schmukle S. C., Sachse K., Borkeanu P. & B. Asendorpf J. B. (2011). Why Mate Choices are not as Reciprocal as we Assume: The Role of Personality, Flirting and Physical Attractiveness. *Eur. J. Pers.* 25, 120-132.
- Baum, A. (2006). Eating Disorders in the Male Athlete. *Sports Medicine*, 36, 1-6.
- Bender, D. (2012). Mirror, Mirror on The Wall: Reflecting on Narcissism. *Journal of Clinical Psychology*, 68(8),877-885.
- Bergeron, D. B. (2007). *The Relationship Between Body Image Dissatisfaction and Psychological Health: An Exploration of Body Image in Young Adult Men*. Unpublished Doctorate Thesis. School of The Ohio State University. USA
- Blouin, G. A & Goldfield, G. S (1995). Body Image and Steroid Use In Male Bodybuilders. *International Journal of Eating Disorders*, 18(2), 159-165.
- Cafri, G., Thompson, K., Ricciardelli, L., McCabe, M., Smolak, L. & Yesalis, C. (2005). Pursuit Of The Muscular Ideal: Physical and Psychological Consequences and Putative Risk Factor. *Clinical Psychology Review*, 25, 215-239.
- Carroll, L. (1989). A Comparative Study Of Narcissism, Gender, and Sex-Role Orientation Among Bodybuilders, Athletes, and Psychology Students. *Psychological Reports*, 64(3), 999-1006.
- Choi, P. Y. L., Pope, JrH. G. & Olivardia, R. (2002). Muscle Dysmorphia: A New Syndrome in Weightlifters. *Br J Sports Med*, 36, 375-377.
- Dèttore, D., Fabris, M. A., Santarnecchi, E (2020). Differential Prevalence Of Depressive And Narcissistic Traits In Competing And Non-Competing Bodybuilders In Relation To Muscle Dysmorphia Levels. *Psychiatr Psychol Klin*, 20(2), 102-111
- Foster, C. A., Shorter, W. G., Griffiths, D. G. & Griffiths, D. M. (2015). Muscle Dysmorphia: Could it be Classified as an Addition to Body Image. *Journal of Behavioral Addictions*, 4(1), 1-5.
- Frederick, D. A., Fessler, D. M., & Haselton, M. G. (2005). Do Representations of Male Muscularity Differ in Men's and Women's Magazines? *Body Image*, 2, 81-86.
- Furnham, A., & Calnan, A. (1998). Eating Disturbances, Self-esteem, Reasons for Exercising and Body Weight Dissatisfaction in Adolescent Males. *European Eating Disorders Review*, 6, 58-72.
- Grieve, F. G. (2007). A Conceptual Model of Factors Contributing to the Development of Muscle Dysmorphia. *Eating Disorders*, 15, 63-80.
- Güngör, N. D. & Selçuk, F. Ü. (2015). Narsistik Kişilik Envanteri (NKE-16): Türkçe Uyarlaması. *Atılım Üniversitesi Sosyal Bilimler Araştırma ve Eğitim Laboratuvarı (SAEL)*, Yayınlanmamış Tartışma Metni.
- Hallsworth, L., Wade, T., Tiggeman, M. (2005). Individual Differences in Male Body Image: An Examination of Self Objectification in Recreational Bodybuilders. *Br J Health Psychol*, 10(3), 453-65.
- Hildebrandt, T., Schlundt, D. & Langenbucher, J. (2004). Muscularity Concerns Among Men: Development Of Attitudinal And Perceptual Measures. *Body Image*, 1, 169-181.
- Hovardağlı, S. (1992). Vücut Algısı Ölçeği. *Psikiyatri, Psikoloji, Psikofarmakoloji Dergisi (3P). Testler Özel Eki*. 1(1), 26-27.
- Karamustafaoglu, O. & Karamustafaoglu, N. (2000). Beden Dismorfik Bozukluğu. *Düşünen Adam*, 13(2), 107-109.
- Koroğlu, E. (2014). *DSM-V Ruhsal Bozuklukların Tanısal ve Sayımsal Elkitabı*. Ankara: Hekimler Yayın Birliği.
- Leone, E. J., Sedory, J. E., Gray, K. A. (2005). Recognition and Treatment of Muscle Dysmorphia and Related Body Image Disorders. *J Athl Train*, 40(4), 352-359.
- McCabe, P. M. & Ricciardelli, L. A. (2001). Parent, Peer and Media Influences on Body Image and Strategies to Both Increase and Decrease Body Size Among Adolescent Boys and Girls. *Adolescent*, 36 (142), 225-240.
- McCreary, D. R., & Sasse, D. K. (2000). An Exploration of the Drive for Muscularity in Adolescent Boys and Girls. *Journal of American College Health*, 48, 297-304.
- Mishkind, M. E., Rodin, J., Silberstein, L. R., ve Striegel-Moore, R. H. (1986). The Embodiment of Masculinity: Cultural, Psychological, and Behavioral Dimensions. *American Behavioural Scientist*, 29, 545-562.
- Mosley, F. E. (2009). Bigorexia: Bodybuilding and Muscle Dysmorphia. *Eur Eat Disorders Rev*. 17, 191-98.
- Murray, B. S., Rieger, E., Touyz, W. S. & Garcia, Y. D. G. (2010). Muscle Dysmorphia And The DSM-V Conundrum: Where Does It Belong? A Review Paper. *International Journal of Eating Disorder*, 43(6), 483-491.
- Olivardia, R. (2001). Mirror, Mirror on The Wall, Who's the Largest of Them All? The Features and Phenomenology of Muscle Dysmorphia. *Harvard Review of Psychiatry*, 9, 254-259.
- Olivardia, R., Pope, G.H. Jr., Borowiecki, J.J., Cohane, H.G. (2004). Biceps and Body Image: The Relationship Between Muscularity and Self-Esteem, Depression, and Eating Disorder Symptoms. *Psychology of Men & Masculinity*, 5(2), 112-120.
- Ozan, E., Kırkpınar, İ., Aydın, N. & Fidan, T. O. M. (2008). Narsistik Kişilik Bozukluğu: Gelişim Süreçleri ve Yaşamı. *Review, Cases and Hypothesis in Psychiatry*, 2(1-2), 26-32.
- Öztürk, O. M. & Uluşahin, A. (2011). *Ruh Sağlığı ve Bozuklukları*. Nobel Tıp.
- Perugi, G., Akiskal, H. S., Giannotti, D., Frare, F., Di Vaio, S., & Cassano, G. B. (1997). Gender-Related Differences in Body Dysmorphic Disorder (Dysmorphophobia). *Journal of Nervous and Mental Disease*, 185(9), 578-582.
- Peters, M.A., (1998). *Body Image Disturbance in Bodybuilder: Body Dissatisfaction, Body Distortion, and Other Body Image Traits*, The degree of Doctor of Philosophy, The Faculty of the Graduate School of the State University, Newyork.
- Ploeg, G. E, Brooks, A. G., Withers, R. T., Dolman, J., Leaney, F., Chatterton, B. E. (2001). Body Composition Changes in Female Bodybuilders During Preparation for Competition. *Eur J Clin Nutr*, 55, 268-77.
- Polat C., & Şimşek K.Y. (2015). Spor Merkezlerindeki Bireylerin Egzersiz Bağımlılığı Düzeylerinin İncelenmesi: Eskişehir İli Örneği. *Akademik Sosyal Araştırmalar Dergisi*, 3(15), 354-369.
- Pope H. G Jr, Katz DL (2004): Psychiatric and Medical Effects of Anabolic-Adrogenic Steroid Use: A Controlled Study of 160 Athletes. *Arch Gen Psychiatry*, 51:375-382
- Pope, G. C., Pope, H. G. Jr, William, M., Fay, C., Olivardia, R. & Phillips, A., K. (2005). Clinical Features of Muscle Dysmorphia Among Males With Body Dysmorphic Disorder. *Body Image*, 2, 395-400.

- Pope, H. G., Jr., Gruber, A. J., Choi, P., Olivardia, R., & Phillips, K. A. (1997). Muscle Dysmorphia. An Underrecognized Form of Body Dysmorphic Disorder. *Psychosomatics*, 38, 548–557.
- Pope, H. G., Phillips, A. K. & Olivardia, R. (2000). *The Adonis Complex: The Secret Crisis of Male Body Obsession*. New York, NY: The Free Press.
- Raskin, R. & Hall, C. S. (1979). A Narcissistic Personality Inventory: *Psychological Reports* 45(2),159-162.
- Ray, Ç. P., Demirkol, E. M. & Tamam, L. (2012). Beden Dismorfik Bozukluğu. *Psikiyatride Güncel Yaklaşımlar*, 4(4), 547-565.
- Ronningstam E. (2010). Narcissistic Personality Disorder: A Current Review. *Curr Psychiatry Rep*, 12, 68–75.
- Santarnecchi, E., Déttore, D. (2012). Muscle Dysmorphia In Different Degrees of Bodybuilding Activities: Valifidation of the Italian Version of Muscle Dysmorphia Disorder Inventory and Bodybuilder Image Grid. *Body Image*, 9, 396-403.
- Silva, D. A. S., DaSilva, R. C & Gonçalves, E. C. A. (2015). Body Image among Men Who Practice Body Building: Comparison by Age, Economic Status and City Size. *Perceptual & Motor Skills: Perception*, 121(2) 537-547.
- Stoviks, R. (2006). The Emancipation of Bodybuilding. *Sports in Society*, 9(3), 463-479.
- Subaşı, B. Okray, Z., Çakıcı, M. (2018). Kas Algısı Bozukluğu Envanteri Türkçe Formunun Profesyonel Erkek Sporcularda Geçerliliği ve Güvenilirliği. *Anadolu Psikiyatri Derg.*, 19(2), 47-54.
- Sungur, M. Z. (1999). Beden Dismorfik Bozukluğu. *Psikiyatri Dünyası*, 1, 19-22.
- Tatlıses, M. (2016). *Spor Salonunda Düzenli Spor Yapan Kişilerin Ortoreksiya Nervoza Belirtileri ile Beden Algısı Arasındaki İlişkinin İncelenmesi*. (Yüksek Lisans Tezi). Beykent Üniversitesi/Sosyal Bilimler Enstitüsü/İstanbul.
- Tazegül, Ü. & Güven, Ö. (2015). Vücut Geliştirme Sporcuları ile Farklı Spor Dallarındaki Elit Sporcuların Ve Spor Yapmayan Bireylerin Narsisizm Seviyelerinin Karşılaştırılması. *Journal of Academic Social Science Studies*, 33, 465-473.
- Tigemann, M. (1992). Body Size Dissatisfaction: Individual Differences in Age and Gender, and Relationship with Self-Esteem. *Personality and Individual Differences*, 13, 39–43.
- Vazire S., Naumann L. P., Rentfrow P. J. & Gosling S. D. (2008). Portrait of a Narcissist: Manifestations of Narcissism in Physical Appearance. *Journal of Research in Personality*, 42, 1439–1447.