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# Examination of the Relationship Between Fitness Center Users' Attitudes to Healthy Nutrition and Muscle Appearance Satisfaction

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**Authors' Contribution:** A: Study design, B: Data collection, C: Data analysis, D: Manuscript preparation, E: Discussion and conclusion

## ABSTRACT

**Study aim(s):** This research was conducted to determine the use of fitness centers for healthy eating and their satisfaction with muscle appearance.
**Methods:** The sample of the study consisted of a total of 393 volunteer participants who were members of a fitness center. Data were collected by online survey method. In addition to the Personal Information Form, the "Attitude Scale towards Healthy Eating" developed by Tekkurşun Demir and Cicioğlu (2019) and the "Muscle Appearance Satisfaction Scale" developed by Selvi and Bozo (2020) were used to collect the data. In the analysis of normally distributed data, independent samples t-test was used for pairwise comparisons, and One-way ANOVA was used for the comparison of more than two groups. Pearson correlation analysis was used to determine the relationship between variables.
**Results:** According to the research findings, while the participants' attitudes toward healthy eating differ significantly according to the number of exercise days per week, they do not differ according to gender, educational status, and occupation. In addition, while muscle appearance satisfaction scores differed significantly according to gender and the number of exercise days per week, there was no significant difference in terms of occupation and education variables. As a result of the correlation analysis, no significant relationship was found between the participants' attitudes toward healthy eating and muscle appearance satisfaction.
**Conclusions:** It can be thought that fitness center users should be conscious about healthy eating and thus they can have better muscle appearance satisfaction.

**Keywords:** Healthy Eating, Fitness Level, Body Shape

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## INTRODUCTION

In recent years, there has been an increase in the number of fitness center users due to the desire for socialization and a healthy lifestyle. The primary purpose of engaging in fitness activities, as stated in the literature, is to create a body image associated with muscles and satisfaction with muscle appearance. The drive to create a body image leads to dependencies such as the use of sports supplements, spending excessive time at fitness centers, muscle dysmorphia (bigorexia), and a desire for a muscular appearance [1].

As the popularity of the fitness industry has grown, dissatisfaction with one's appearance has emerged among both men and women. While men aspire to have a more muscular and larger physique, women have become eager to have a muscular and slim-waisted appearance [2]. The determinant of a muscular appearance is not solely muscularity; body fat percentage is equally important. A lower body fat percentage enhances muscle appearance [3]. This desire to attain such an appearance often leads to the development of eating disorders, as individuals strive to lose fat and gain muscle. This condition is commonly referred to as muscle dysmorphia [4].

Nutrition is defined as the intake and utilization of nutrients by an individual for the growth, development, and maintaining a healthy life [5]. The nutritional status of individuals is influenced by many factors such as genetic characteristics, age, stress, lifestyle, environmental conditions, and working conditions. Habits in nutrition, such as the type of food consumed, skipping meals, short intervals between meals, and food consumption, have a significant impact on human metabolism [6]. Healthy eating, on the other hand, involves preventing the preference for energy-dense foods [7]. However, fitness center users tend to opt for carbohydrate, protein, and fat-rich foods that provide sufficient energy sources for healthy eating [8]. They consider the desire to have a muscular physique and engage in exercise as part of a healthy lifestyle. Individuals who engage in sports not only value the appearance of their bodies but also have a self-protective instinct against negative comments from their surroundings. It is known that muscle dysmorphia and dissatisfaction with muscle appearance have negative effects on physical and psychological health [9]. Due to concerns about social appearance, individuals may exhibit unhealthy eating behaviors. 1 eating too little or consuming excessive amounts of food is referred to as unhealthy eating [10]. Individuals who exercise regularly but do not have healthy eating habits may have disturbances in body image. These individuals are unable to establish a healthy relationship between body appearance and nutrition [11]. In this context, this study aims to examine the relationship between the healthy eating attitudes of fitness center users and their satisfaction with muscle appearance.

## METHODS

### *Research design*

This research, conducted to determine the attitudes towards healthy eating and satisfaction with muscle appearance among users of fitness centers, was carried out according to the cross-sectional survey model, which is a quantitative research method. In survey research, the event or object under study is defined as it is without any attempt to alter or influence it [12].

### *Study sample*

The convenience sampling method was used in the research. Convenience sampling is a non-probability sampling method where the sample segment to be selected from the population is determined by the researcher's judgment. In convenience sampling, data is collected from the population in the easiest, fastest, and most economical way [13]. The selected sampling method aims to prevent time, money, and labor loss. It is assumed that the researcher will try to reach the sample by starting

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with the most accessible respondents until reaching a group of the desired size. In this context, a total of 393 participants, who were members of the fitness center, were included in the research. The distribution of the research group is presented in Table 1.

**Table 1. Distribution of Personal Information of the Sample Group**

| Variables | Category | n | % |
|---|---|---|---|
| Gender | Male | 239 | 60.8 |
| | Female | 154 | 39.2 |
| Education Degree | High school and below | 137 | 34.9 |
| | Associate or Bachelor | 237 | 60.3 |
| | Graduate | 19 | 4.8 |
| Occupation | Student | 109 | 27.7 |
| | Self-employed | 185 | 47.1 |
| | Public sector employee | 99 | 25.2 |
| Weekly Exercise Days | 1 day | 59 | 15 |
| | 2 days | 47 | 12.0 |
| | 3 days | 83 | 21.1 |
| | 4 days | 73 | 18.6 |
| | 5 days | 62 | 15.8 |
| | 6 days | 63 | 16.0 |
| | 7 days | 6 | 1.5 |
| Total | | 393 | 100 |

Table 1 presents the distribution of participants' personal information. According to the data, it can be concluded that 60.8% (n=239) of the individuals in the sample group are male, 60.3% (n=237) have an associate or bachelor's degree, 47.1% (n=185) are self-employed, 21.1% (n=83) exercise 3 days a week.

### *Data collections tools*

*Descriptive Information Form:* The personal information form includes questions about individuals' gender, education degree, occupation, and weekly exercise days.

*Attitude towards Healthy Eating Scale (AtHES):* Developed by Demir and Cicioğlu [14], this scale consists of 21 items and aims to determine individuals' attitudes toward healthy eating. The scale consists of four subscales: Knowledge about Nutrition (KN), Emotions towards Nutrition (ETN), Positive Eating (PE), and Negative Eating (NE). The scale is in a 5-point Likert format. The negative items of the scale are 6th, 7th, 8th, 9th, 10th, 11th, 17th, 18th, 19th, 20th, and 21st, and reverse scoring is applied during the analysis. The minimum possible score on the scale is 21, and the maximum score is 105. The original form of the scale has a reliability coefficient of 0.87. In our study, Cronbach's Alpha coefficient for the reliability of the scale was calculated as 0.859.

*Muscle Appearance Satisfaction Scale (MASS):* Developed by Selvi and Bozo [9], this is a 5-point Likert scale consisting of 19 items and five subscales (Addiction to Bodybuilding, Dissatisfaction with the Muscles, Physical Injury, Supplement Use, and Examining Muscles (checking). Items 1, 4, and 14 are reverse-coded. The Cronbach's Alpha reliability coefficient for the overall scale is 0.94, while in our study, the Cronbach's Alpha coefficient for the reliability of the scale was calculated as 0.812.

### *Data analysis*

The SPSS software package was used for data analysis in the research. Skewness and kurtosis values were checked to determine whether the data followed a normal distribution. These values were evaluated within the range of +2 and -2 [15]. The homogeneity of variances was determined using Levene's test. The analyses showed that the data met the assumptions of parametric tests. In the current study, the data obtained from the participants were analyzed using descriptive statistical methods, independent sample t-test, One-way Analysis of Variance (ANOVA), correlation analysis, and multiple regression. Cronbach's Alpha coefficients were calculated to determine the reliability of the scales.

## RESULTS

**Table 2. Pearson Correlation Analysis Between Research Variables**

| Variables | X̄±SD | MASS | AtHES | p |
|---|---|---|---|---|
| MASS | 2.83±0.59 | ---- | 0.02 | 0.686 |

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| | | | | |
|---|---|---|---|---|
| AtHES | 3.60±0.63 | 0.02 | ---- | 0.686 |

*MASS: Muscle Appearance Satisfaction Scale AtHES: Attitude towards Healthy Eating Scale*

When Table 2 was examined, the relationship between the participants' total scores on the MASS and their AtHE was examined. At the 0.05 significance level, the relationship was not found to be statistically significant.

**Table 3. Comparison of MAS and AtHE According to Participants' Gender**

| Variables | Gender | N | X̄±SD | t | p |
|---|---|---|---|---|---|
| MAS | Female | 154 | 2.74±0.61 | -2.47 | 0.01 |
| | Male | 239 | 2.89±0.57 | | |
| AtHE | Female | 154 | 3.63±0.65 | 0.77 | 0.44 |
| | Male | 239 | 3.58±0.61 | | |
| Addiction to Bodybuilding | Female | 154 | 2.79±0.89 | -2.17 | 0.03 |
| | Male | 239 | 2.99±0.90 | | |
| Dissatisfaction with the Muscles | Female | 154 | 2.96±0.96 | 1.60 | 0.11 |
| | Male | 239 | 2.80±0.98 | | |
| Physical Injury | Female | 154 | 2.89±0.98 | -2.57 | 0.01 |
| | Male | 239 | 3.14±0.94 | | |
| Supplement Use | Female | 154 | 2.47±0.95 | -3.01 | 0.00 |
| | Male | 239 | 2.76±0.90 | | |
| Examining Muscles (checking) | Female | 154 | 2.66±0.97 | -1.02 | 0.31 |
| | Male | 239 | 2.76±1.02 | | |
| Knowledge about Nutrition | Female | 154 | 4.15±0.85 | 2.28 | 0.02 |
| | Male | 239 | 3.93±0.93 | | |
| Emotions towards Nutrition | Female | 154 | 3.04±0.95 | -0.55 | 0.58 |
| | Male | 239 | 3.10±0.91 | | |
| Positive Eating | Female | 154 | 3.84±0.91 | 1.91 | 0.06 |
| | Male | 239 | 3.66±0.89 | | |
| Negative Eating | Female | 154 | 3.65±0.99 | -0.63 | 0.53 |
| | Male | 239 | 3.71±1.00 | | |

*MASS: Muscle appearance satisfaction scale, AtHES: Attitude towards healthy eating scale*

When Table 3 was examined, there was no significant difference in the gender-related attitudes of the participants towards healthy eating, dissatisfaction with the muscles, groaning, feelings about nutrition, and bad eating habits ($p>0.05$). It was determined that there was a significant difference between the genders in terms of satisfaction with muscle appearance, addiction to bodybuilding, physical injury, supplement use, and knowledge about nutrition ($p<0.05$).

When Table 4 was examined, no statistically significant difference was found in the level of satisfaction with muscle appearance and attitudes towards healthy eating according to the educational status of the participants ($p>0.05$).

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**Table 4. Comparison of Muscle Appearance Satisfaction and Attitudes Regarding Healthy Eating According to Participants' Educational Status**

| Variables | Education Status | *N* | X̄±SD | F | p |
|---|---|---|---|---|---|
| MAS | High school and below | 137 | 2.79±0.58 | 2.55 | 0.08 |
| | Associate or Bachelor | 237 | 2.87±0.59 | | |
| | Graduate degree | 19 | 2.59±0.66 | | |
| AtHE | High school and below | 137 | 3.58±0.63 | 0.07 | 0.77 |
| | Associate or bachelor's degree | 237 | 3.60±0.63 | | |
| | Graduate degree | 19 | 3.70±0.64 | | |

*MASS: Muscle appearance satisfaction scale, AtHES: Attitude towards healthy eating scale*

**Table 5. Comparison of Muscle Appearance Satisfaction and Attitudes Regarding Healthy Eating According to Participants' Occupational Status**

| Variables | Occupation | *N* | X̄±SD | F | p |
|---|---|---|---|---|---|
| MAS | Student | 109 | 2.92±0.61 | 2.80 | 0.06 |
| | Self-employed | 185 | 2.84±0.58 | | |
| | Public sector employee | 99 | 2.72±0.59 | | |
| AtHE | Student | 109 | 3.70±0.63 | 2.48 | 0.09 |
| | Self-employed | 185 | 3.58±0.63 | | |
| | Public sector employee | 99 | 3.51±0.60 | | |

*MASS: Muscle appearance satisfaction scale, AtHES: Attitude towards healthy eating scale*

**Table 6. Comparison of Muscle Appearance Satisfaction and Attitudes Towards Healthy Eating According to Participants' Weekly Exercise Days**

| Variables | Weekly Exercise Days | *N* | X̄±SD | F | p | Differences |
|---|---|---|---|---|---|---|
| MAS | 1 day | 59 | 2.62±0.72 | 4.00 | 0.00 | 6>1 6>2 |
| | 2 days | 47 | 2.65±0.65 | | | |
| | 3 days | 83 | 2.79±0.48 | | | |
| | 4 days | 73 | 2.94±0.56 | | | |
| | 5 days | 62 | 2.87±0.52 | | | |
| | 6 days | 63 | 3.03±0.57 | | | |
| | 7 days | 6 | 3.00±0.60 | | | |
| AtHE | 1 day | 59 | 3.15±0.46 | 11.95 | 0.00 | 3>1 4>1 5>1 6>1 3>2 4>2 5>2 6>2 |
| | 2 days | 47 | 3.30±0.44 | | | |
| | 3 days | 83 | 3.64±0.60 | | | |
| | 4 days | 73 | 3.86±0.58 | | | |
| | 5 days | 62 | 3.76±0.64 | | | |
| | 6 days | 63 | 3.73±0.66 | | | |
| | 7 days | 6 | 3.35±0.59 | | | |

*MASS: Muscle appearance satisfaction scale, AtHES: Attitude towards healthy eating scale*

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When Table 5 was examined, no statistically significant difference was found in the level of satisfaction with muscle appearance and attitudes towards healthy eating according to the occupational status of the participants ($p>0.05$).

When Table 6 was examined, statistically significant differences were found in the level of satisfaction with muscle appearance and attitudes towards healthy eating according to participants' weekly exercise. The results show that the participants who exercise 6 days a week are more satisfied in terms of muscle appearance than the participants who exercise 1 and 2 days a week. Moreover, it was revealed that the participants who exercised 3,4,5, and 6 days a week had higher attitudes towards healthy eating than the participants who exercised 1 and 2 days a week.

## DISCUSSION

Based on the conducted analyses, it was determined that there was no relationship between MAS and AtHE. This suggests that participants do not prioritize healthy eating in terms of MAS. In their study with 231 participants from martial arts clubs, swimming teams, basketball teams, and public fitness facilities, Tremblay et al. [16] found a positive relationship between muscle appearance satisfaction and unhealthy eating behaviors. Morry and Staska [17] found in their study with psychology students that dissatisfaction with muscle appearance and body shape leads individuals towards unhealthy eating, with magazines and television programs being identified as major contributing factors.

In our study, a significant difference in muscle appearance satisfaction was found based on gender as a demographic variable. Men had higher MAS scores compared to women. However, no statistically significant difference was found in AtHE based on gender. Heiman and Olenik-Shemesh [18] examined the eating habits, physical appearance, and body image perceptions of 14 male and 16 female participants aged 20-40 who engage in sports. Similar results were obtained regarding the gender variable in their study, suggesting that the difference may be more related to age. Oellingrath et al. [19] found that Norwegian adolescents, consisting of 469 individuals, desired a thinner appearance for girls and a more muscular appearance for boys.

In our study, significant differences were observed in AtHE based on the number of weekly exercise days. Participants who exercised 1 or 2 days a week had lower levels of AtHE compared to those who exercised 3, 4, 5, or 6 days a week. Berk and Bingöl [20] conducted a study with 170 female and 305 male participants interested in fitness and bodybuilding. They found no significant difference in the nutrition subscale of the healthy lifestyle behavior scale based on exercise duration (years). It can be speculated that as individuals' exercise history increases, they become more conscious of their choices, and in the long term, fitness and bodybuilding support a healthy lifestyle.

No statistically significant difference was found in MAS and AtHE based on the occupation variable in our study. In a study conducted in Kuwait, Ebrahim et al. [21] found that 400 male participants employed in public and private universities were generally dissatisfied with their muscle appearance, leading them to engage in continuous irregular and unhealthy eating. However, similar to our study, no significant difference was found in muscle appearance and dietary habits between participants employed in the public and private sectors.

This research was conducted to contribute to the interpretation of the relationship between MAS and AtHE among fitness center members in terms of demographic characteristics. The lack of a relationship between muscle appearance satisfaction and attitudes

towards healthy eating in both male and female participants may lead to unhealthy eating behaviors, eating disorders, and social appearance anxiety in pursuit of desired physical appearance goals [22].

It can be suggested that informing fitness participants coaches and nutrition experts could help reduce the risks associated with dissatisfaction with muscle appearance.

## CONCLUSIONS

This study aimed to examine the relationship between MAS and AtHE among fitness center users based on demographic variables. The findings indicate that there is no significant relationship between muscle appearance satisfaction and attitudes toward healthy eating among fitness center users. This may be attributed to a lack of sufficient information provided by trainers and nutrition experts to fitness participants.

## CONFLICT OF INTERESTS

No potential conflict of interest was reported by the authors.

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## REFERENCES

1. Mosley PE. Bigorexia: Bodybuilding and Muscle Dysmorphia. European Eating Disorders Review (17);2008,191-198. https://doi.org/10.1002/erv.897.
2. Pope HG, Gruber A, Mangweth-Matzek B, Bureau B. Body Image Perception Among Men in Three Countries. *American Journal of Psychiatry;*2000,157(8),1297-1301. https://doi.org/10.1176/appi.ajp.157.8.1297.
3. Cafri G, Strauss J, Thompson J. Male Body Image: Satisfaction and Its Relationship to Well-Being Using the Somatomorphic Matrix. *International Journal of Men's Health;* 2002, 1(2), 215-231. https://doi.org/https://doi.org/10.3149/jmh.0102.215.
4. Choi PY, H G Pope, Olivardia R. Muscle dysmorphia: a new syndrome in weightlifters. *British Journal of Sports Medicine*; 2002, 36(5), 375-376.
5. Baysal A. Genel Beslenme (13. Baskı b.). Ankara: Hatiboğlu Yayınevi; 2010.
6. Elmacıoğlu F. *Evaluation of the nutrition and eating habits of pre-clinical students*. Nutrition and Diet Journal;1995, 24, 263-271.
7. Hockenberry MJ, Wilson D. Wong Gilds Nursing Care of Infants and Children (9. Baskı) Canada; Mosbyco, 2010.
8. Padavinangadi A, Zi Xuan L, Chandrasekaran N, Johari N, Kumar N, Jetti R. The Impact of Eating and Exercise Frequency on Weight Gain - A Cross-Sectional Study on Medical Undergraduate Students. *Journal of Clinical and Diagnostic Research*;2017,11(2),1-3. https://doi.org/10.7860/JCDR/2017/25346.9458.
9. Selvi K, Bozo Ö. The dark side of bodybuilding: the role of bodybuilding activities in compensation of frustrated basic psychological needs. Motivation and Emotion, 2020, 44(2), 190-208. https://doi.org/https://doi.org/10.1007/s11031-019-09805-6.
10. Demir GT. Namlı S, Cicioğlu H. *Takım ve Bireysel Sporlarda Sosyal Görünüş Kaygısı Sağlıklı Beslenmeye İlişkin Tutumun Belirleyicisi Midir?* Spormetre The Journal of Physical Education and Sport Sciences; 2021, 19(4), 124-134. https://doi.org/10.33689/spormetre.915191.

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11. Aslan D. *Beden algısı ile ilgili sorunların yaratabileceği beslenme sorunları.* Sürekli Tıp Eğitimi Dergisi;2004, 13(9), 326-329.
12. Karasar N. *Bilimsel Araştırma Yöntemi: Kavramlar, İlkeler, Teknikler,* 32. Baskı. Ankara: Nobel Yayınları; 2017.
13. Kinnear T, Taylor J. (1996). *Marketing Research an Applied Approach.* International Edition, McGraw Hill; 1996.
14. Demir GT, Cicioğlu H. *Sağlıklı Beslenmeye İlişkin Tutum Ölçeği (SBİTÖ): Geçerlik ve güvenirlik çalışması.* Gaziantep Üniversitesi Spor Bilimleri Dergisi;2019 4(2), 256-274. https://doi.org/10.31680/gaunjss.559462.
15. George D, Mallery P. *SPSS for Windows Step by Step: A Simple Guide and Reference.* Allyn and Bacon; 2003.
16. Tremblay L, Kosmerly S, Larivière C. (2019). Exercise Addiction, Muscle and Weight Satisfaction, and Disordered Eating as Predictors of Overtraining in Male Bodybuilders. *The International Journal of Health, Wellness, and Society*;2019,10(2),1. https://doi.org/https://doi.org/10.18848/2156-8960/CGP/v10i02/1-18 (Article).
17. Morry MM., Staska SL. (2001). Magazine Exposure: Internalization, Self-Objectification, Eating Attitudes, and Body Satisfaction in Male and Female University Students. *Canadian Journal of Behavioural Science;* 2001, 33(4), 269-279.
18. Heiman T, Olenik-Shemesh D. (2019). Perceived Body Appearance and Eating Habits: The Voice of Young and Adult Students Attending Higher Education. *International Journal of Environmental Research and Public Health*; 2019, 16(451),1-12. https://doi.org/10.3390/ijerph16030451.
19. Oellingrath IM, Hestetun I, *Svendsen M. Gender-specific association of weight perception and appearance satisfaction with slimming attempts and eating patterns in a sample of young Norwegian adolescents.* Public Health Nutrition; 2015, 19(2), 265-274. https://doi.org/10.1017/S1368980015001007.
20. Berk Y, Bingöl M. *Fitness ve Vücut Geliştirme Yapan Bireylerin Sağlıklı Yaşam Alışkanlıklarının İncelenmesi.* Gaziantep Üniversitesi Spor Bilimleri Dergisi; 2023, 8(1), 93-105.
21. Ebrahim M, Alkazemi D, Zafar T A, Kubow S. Disordered eating attitudes correlate with body dissatisfaction among Kuwaiti male college students. *Journal of Eating Disorders*;2019, 7(37), 1-13. https://doi.org/10.1186/s40337-019-0265-z.
22. Turel T, Jameson M, Gitimu P, Rowlands Z, Mincher J, Pohle-Krauza R. (2018). Disordered eating: Influence of body image, sociocultural attitudes, appearance anxiety, and depression - a focus on college males and gender comparison. Cogent Psychology;2018,5(1),15-20. https://doi.org/10.1080/23311908.2018.1483062.

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