

## SELF-PERCEIVED REAL AND IDEAL BODY SHAPES AND THEIR ASSOCIATION WITH ATTITUDES TOWARD OBESE CHILDREN AMONG PREADOLESCENT SWIMMERS

**Funda COŞKUN ÖZYOL**

Asst. Prof. Dr., Van Yüzüncü Yıl University, Turkey, fcoskun@yyu.edu.tr  
ORCID: 0000-0003-0198-4331

Received: 29.12.2019 Accepted: 20.04.2020

### ABSTRACT

The purpose of this study was to examine self-perceived real and ideal body shapes of preadolescent swimmers and how they relate to their attitudes toward obese peers. The study sample consisted of 160 female ( $\bar{x}_{age}= 11.46\pm.59$ , range: 11-12 years) and 146 male ( $\bar{x}_{age}= 11.53\pm.50$ , range: 11-12 years) competitive swimmers aged 11-12. Data concerning self-perceived real and ideal body shapes were collected using Collins' "Body Figure Perceptions Scale", while attitudes toward obese peers were evaluated using the "Attitudes toward Obese Children Scale (AOCS)". There were no significant differences between the female and male participants with respect to self-perceived ideal body shape [ $U= 10675.5, p> .05$ ], BMI [ $U= 10757.50, p> .05$ ] and attitudes toward obese peers [ $U= 11408.0, p> .05$ ]. However, the self-perceived real body shape of the female swimmers was significantly larger than that of the males [ $U= 8848.0, p<.05$ ]. Both male and female participants showed moderately positive attitudes toward their obese peers. Of the female participants, 29% rated their real body shape as significantly larger than their ideal physique, while there was no significant difference between the self-perceived real and ideal body shapes of the males. There was a statistically significant strong positive correlation between female participants' real body shape and BMI ( $r_s= .50, n=160, p= .001$ ) and a medium positive correlation between those of the males ( $r_s= .49, n=146, p= .001$ ). Male swimmers' BMI was negatively correlated with their AOCS scores ( $r_s= -.17, n=146, p= .04$ ). The attitudes of Turkish preadolescent swimmers toward their obese peers were moderately positive and did not correlate with their body shape perceptions, except for the finding of a negative correlation between the male participants' BMI and AOCS scores.

**Keywords:** Body shape, body image, ideal body shape, swimmer, obesity, fatphobia.

**INTRODUCTION**

The World Health Organization (WHO) has stated that obesity affects people in all age groups, highlighting the fact that 18% of children and adolescents aged 5-19 are overweight or obese, according to 2016 data (WHO, 2018). Despite numerous attempts to tackle obesity on a global scale, obesity rates have nonetheless increased and will likely continue to do so in the coming years. Obesity has been implicated not only in various non-infectious diseases (including cardiovascular diseases, some cancers, and musculoskeletal disorders) but is also associated with psychological and social problems. One of the issues frequently faced by obese individuals is the negative attitudes and behaviors of others. This phenomenon is termed “weight bias” (Forhan & Salas, 2013) and has been documented in settings such as health care facilities, educational establishments, workplaces, the media, and society as a whole (Puhl & Brownell, 2001; Puhl & Heuer, 2009). Among the main reasons for weight bias are the beliefs that obese people are unmotivated and lack the self-control to manage their weight, that they possess low intellectual capacity, and that they do not take suggestions to control their weight seriously or consider the consequences of their actions (Puhl & Brownell, 2001). As a result of weight bias, overweight or obese individuals may be excluded from friendships or feel embarrassed because of their excess weight (Puhl & Heuer, 2010). Puhl and Latner (2007) found that children and adolescents are more vulnerable to the harmful effects of weight bias than adults. Research on weight bias among children and young people has thus far mainly focused on teasing and bullying, with weight bias reported as the most common reason for peer harassment among students in a school environment (Pont, Puhl, Cook & Slusser, 2017).

While various methods exist to objectively evaluate obesity, including skinfold measurement, BMI, and bioelectrical impedance, the concept of an ideal body shape universally accepted in society is a result of media messages and resists objective assessment. Individuals may strive to improve their appearance, especially by keeping their weight under control, in order to conform to standards of attractiveness and thus elicit positive reactions, as thinness is valued in most modern societies (Maurer & Sobal, 1999). The value attached to thinness is linked to the perception of overweight and obese individuals as being of lower worth (Chalker, 2014). Given the prevalence of such messages in society, numerous studies have reported body dissatisfaction in both women and men (Griffiths, Murray, Krug & McLean, 2018; Quittkat, Hartman, Düsing, Buhmann & Vocks, 2019). While women have exhibited an increasing desire to be thinner, in men the desire to be more muscular prevails (Melching, Green, O’Neal & Renfro, 2016; Heider, Spruyt & Houwe, 2018). Body dissatisfaction even exists among individuals such as athletes and exercise science students who would be assumed to have more ideal and/or athletic physiques (Lim, Omar-Fauzee & Rosli, 2011; Swami, Steadman & Tovee, 2009; Yager, Gray, Curry & McLean, 2017). Kristjánsdóttir, Sigurðardóttir, Jónsdóttir, Þorsteinsdóttir, and Saavedra (2019) examined the body image concerns of Icelandic athletes competing at elite levels in five different branches of sports (aesthetic, endurance, weight-class, fitness, and ball sports). The researchers reported that 17.9% of 755 athletes had severe or moderate level body image dissatisfaction and that this rate reached 39.5% for athletes competing in aesthetic sports. In another study, Yager et al. (2017) compared the body dissatisfaction of Australian health and physical

education majors with that of other education majors and found high levels of body dissatisfaction in both groups of students.

Negative attitudes and behaviors resulting from weight bias towards obese and overweight individuals in various social settings have been documented in several studies (Dimmock, Hallett & Grove, 2009; Zuzelo & Seminara, 2006; Berryman, Dubale, Manchester & Mittelstaedt, 2006). Negative attitudes towards obesity and constant pressure on overweight individuals to lose weight loss are widespread in fields such as physical education, sports, and exercise sciences (Langdon, Rukavina & Greenleaf, 2016). The source of negative attitudes towards obese individuals has been attributed to the belief that obese individuals are lazy, lack willpower, and are undisciplined (Carels, 2013; Dhurandhar, 2013). These ideas have been reinforced by the prevalence of an ideal athletic body shape promoted by the media, resulting in many individuals desiring to attain an athletic physique (Teachman & Brownell, 2001).

Several studies have demonstrated the existence of negative attitudes among athletes towards obesity. In one such study focusing on the attitudes of students in psychology and sports education departments, O'Brien, Hunter and Banks (2007) found that sports education students were more prejudiced against obese individuals than psychology students. Similarly, Yılmaz and Dinç (2010) found that physical education and sports majors exhibited negative attitudes towards obese individuals. Weight-related concerns are frequently observed in athletes, especially as a result of the pressure to maintain a slim physique in elite athletics (Harris & Foltz, 1999). Parsak and Saraç (2018) examined the relationship between athletes' athletic identity and their attitudes towards obese individuals, finding that their subjects' harbored negative attitudes towards obese individuals and that higher levels of athletic identity were associated with more negative attitudes towards obese individuals increase. Similarly, Saraç and Parsak (2018) showed that athletes participating in team sports had negative attitudes toward obese individuals.

The purpose of the present study was to investigate the association between preadolescent swimmers' self-perceived real and ideal body shapes and their attitudes toward obese peers. An exploratory approach was taken as a first step toward developing a deeper understanding of the body shape perceptions of the participants, who, as athletes, may be thought to have ideal physiques, and of their attitudes toward obese peers. The relationships among these variables will also contribute to understanding the associations between body shape and attitudes toward obese individuals.

## **METHOD**

### ***Research Design***

This cross-sectional study was conducted to determine the relationship between self-perceived real and ideal body shapes and attitudes toward obese peers among preadolescent female and male Turkish swimmers. The

data, which included the answers to questionnaires and BMI-related measurements (weight and height), were collected in 2018 during the swimming competition season.

### ***Participants***

The study sample consisted of 160 female ( $M_{age}= 11.46\pm.59$ ) and 146 male ( $M_{age}= 11.53\pm.50$ ) competitive swimmers, all aged 11-12 years, participating in the Swimming Improvement Project Final Races. Ethical approval to undertake this study was granted by the relevant university ethics committee and parental permission and informed written consent were obtained for each participant prior to the start of any study-related activities.

### ***Data Collection***

The Body Figure Perceptions Scale (BFPS), BMI formula (kg/m), and the Attitude toward Obese Children Scale (AOCS) were used in the study. BFPS was developed by Collins (1991) to evaluate children's' perceptions concerning body shape and includes 7 figures displayed in ascending order, beginning with the leanest silhouette (1) on the left to the heaviest silhouette (7) on the right. Participants were required to select one of the seven body shapes that resembled their "real (actual)" (1st choice) and "ideal" (2nd choice) body shape. BMI was calculated by dividing the participant's body mass (in kg) by the square of the participant's height (in m). Height and weight were measured while the participants were barefoot and wearing swimsuits. AOCS was developed to assess children's attitudes toward their obese peers (Balci Çelik, Batık Özcan & Aksoy, 2015). The scale consists of 16 items with a six-point Likert scale ranging from 0 (strongly disagree) to 5 (strongly agree). Total scores range from 0-80, with higher scores indicating more positive attitudes toward obese children. Cronbach's Alpha coefficient, calculated to measure the reliability of AOCS, was .76 (Balci Çelik et al., 2015). The reliability of the scale in the present study was .82.

### ***Data Analysis***

Data were analyzed using the SPSS 17.0 software package for Windows. The Mann-Whitney U test was employed to calculate the differences between the two groups (female and male genders) in terms of BFPS scores, BMI, and AOCS scores. The Wilcoxon signed-rank test was used to compare the difference between female and male swimmers' self-perceived real and ideal body shapes. Correlation coefficients between variables were calculated using Spearman's rho.

## **RESULTS**

Prior to performing correlation analysis, the Mann-Whitney U test was used to compare female and male preadolescent swimmers' self-perceived real and ideal body shapes, BMI, and their attitudes toward obese peers. According to our results, self-perceived real body shape was larger for female swimmers ( $Mdn= 4.00$ ) than for male swimmers [ $(Mdn= 4.00)$ ,  $U= 8848.00$ ,  $p= .001$ ,  $z= -3.99$ ]. However, mean self-perceived ideal body shape

[( $Mdn_{female}= 4.00$ ,  $Mdn_{male}= 4.00$ ),  $U=10462.50$ ,  $p= .07$ ,  $z= -183$ ], BMI [( $Mdn_{female}= 18.60$ ,  $Mdn_{male}= 18.25$ ),  $U = 10757.50$ ,  $p= .23$ ,  $z= -1.19$ ], and attitudes toward obese peers [( $Mdn_{female}= 56.98$ ,  $Mdn_{male}= 57.00$ ),  $U= 11408.00$ ,  $p= .73$ ,  $z= -.35$ ] were not significantly different between female and male swimmers. Table 1 shows the means and standard deviations for all variables.

**Table 1.** Means and Standard Deviations of All Study Variables by Gender

	Female (N= 160)		Male (N= 146)		Total (N= 306)	
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Perceived real body shape	3.94	.87	3.59	.76	3.77	.83
Perceived ideal body shape	3.74	.56	3.64	.64	3.70	.61
BMI	18.86	2.59	18.43	2.18	18.65	2.41
AOCS	52.28	12.63	54.84	12.22	54.55	12.42

The results of the Wilcoxon signed-rank test revealed a significant difference between female swimmers’ perceived real and ideal body shapes. Of the female participants, 29% had an ideal body shape thinner than their real shape, for 10% the opposite was true, and 61% were satisfied with their physique ( $Z= -3.10$ ,  $p= .002$ ) (Table 2). However, for male swimmers there was no significant difference between their perceived real and ideal body shapes, with 20% desiring to be thinner, 23% having an ideal body shape larger than actual, and 57% satisfied with their physique ( $Z= -.83$ ,  $p= .41$ ) (Table 2).

**Table 2.** Perceived Ideal and Real Body Shape Discrepancy of Participants

	Female		Male	
	N	%	N	%
Ideal body shape < Real body shape	47	29	30	20
Ideal body shape > Real body shape	16	10	33	23
Ideal body shape = Real body shape	97	61	83	57

Spearman’s rank-order correlation analysis was performed to determine the relationships between preadolescent female and male swimmers’ self-perceived real body shapes, BMI, and attitudes toward obese peers. No statistically significant correlations between the self-perceived real body shapes and attitudes toward obese peers were found for either female ( $r_s= -.05$ ,  $n= 160$ ,  $p= .57$ ) or male ( $r_s= -.15$ ,  $n= 146$ ,  $p= .08$ ) swimmers. However, the results did reveal a statistically significant strong positive correlation between female swimmers’ real body shape and BMI ( $r_s= .50$ ,  $n=160$ ,  $p= .001$ ) and a medium positive correlation between male swimmers’ real body shape and BMI ( $r_s= .49$ ,  $n= 146$ ,  $p= .001$ ). Male swimmers’ BMI was negatively correlated with AOCS scores ( $r_s= -.17$ ,  $n= 146$ ,  $p= .04$ ). There was no significant correlation between self-perceived ideal body shape and BMI ( $r_s= .05$ ,  $n= 306$ ,  $p= .43$ ), nor between ideal physique and attitudes toward obese peers ( $r_s= -.02$ ,  $n= 306$ ,  $p= .74$ ).

**CONCLUSION and DISCUSSION**

The results of this study revealed a difference between the female and male swimmers' self-perceived ideal body shapes but found no statistically significant differences between female and male swimmers with respect to self-perceived real body shape, BMI, or attitudes toward obese peers. The results also indicated that females reported being heavier than ideal at a significantly higher rate than males. These findings are consistent with the literature, suggesting that women are more concerned about their bodies and experience greater dissatisfaction with their body shape compared to men (Mellor, Fuller-Tyszkiewicz, McCabe & Ricciardelli, 2010; Brennan & Lalonde, 2010). For example, Button, Sonuga-Barke, Davies and Thompson (1996), in their study focusing on self-esteem and eating problems, found that 56% of female students felt "too fat". One explanation for this finding is the ideal of thinness in modern societies as a precondition of happiness, success, and social acceptance, along with the association of being overweight with laziness, weakness, lack of self-control, and other negative qualities (Grogan, 2017). In another study, researchers compared the perceived real and ideal body shapes of athletes versus non athletes and found that the majority of female athletes and non athletes perceived their bodies to be larger than actual and that they idealized slimmer physiques (Hallinan, Pierce, Evans, DeGrenier & Andres, 1991). Krentz and Warschburger (2011) reported that body dissatisfaction was experienced by both athletes and non athletes at nearly identical levels. Although there are numerous reasons for body dissatisfaction and the desire to be thinner among preadolescent female swimmers, these phenomena are, to some extent at least, determined by social pressures placed on individuals to conform to certain body shapes, weight, and/or images, whether they are athletes or not. In addition to these social pressures, criticisms of athletes' physical appearance by their coaches, teammates, friends, and/or family members may also contribute to body dissatisfaction (Petrie & Greenleaf, 2011; Coppola, Ward & Freysinger, 2014).

In the present study, the participating 11-12-year-old male and female swimmers were found to have positive above-average attitudes toward their obese peers. Several studies have revealed that both boys and girls harbor anti-fat attitudes towards overweight and obese peers starting from the age of two (Di Pasquale & Celsi, 2017; Sagone & De Caroli, 2013). In a study conducted with white and Hispanic secondary school students in the U.S.A., Greenleaf, Chambliss, Rhea, Martin and Morrow (2006) reported that participants exhibited negative stigmatization tendencies towards excess weight regardless of ethnicity and gender. The subjects in their study also stated a preference for participating in social, academic, and recreational activities with their thin peers rather than their overweight peers. However, studies reporting positive attitudes towards obese individuals have also been published. Öztürk, Alpkaya, Keskin and Çubuk (2017) examined the attitudes of Turkish children aged 11-13 towards their obese peers and found them to be positive, consistent with the findings of the current study. Another Turkish study found no significant difference between 15-year-old male and female Turkish adolescents in terms of their attitudes towards obese peers, reporting moderately positive scores (Alpkaya & Çoknaz, 2018). The literature reveals that individuals involved in the sports community (exercise science students, physical education teachers, coaches, etc.) generally have negative attitudes towards obese individuals. Some of the

participants in these studies, who are frequently subjected to strict training and nutrition programs, believe that obese individuals love to eat, are physically unattractive, have no or limited self-control, and lack self-confidence (Griffin & Harris, 1996; Langdon, Rukavina & Greenleaf, 2016; Peterson, Puhl & Luedicke, 2012; O'Brian, Hunter & Banks, 2007; Greenleaf, Martin & Rhea, 2008). The findings of the aforementioned studies are thus not consistent with those of the current study. However, in a study examining the attitudes of Malaysian nursing students towards obese individuals, the participants' attitudes were found to be positive. The reason that the participants in the present study did not have negative attitudes towards their obese peers may be due to the fact that such negative attitudes towards obesity are simply not common in Turkey among preadolescents, whether athletes or not. Although studies have shown that young children may experience weight stigma, which often continues throughout childhood, and be subjected to negative attitudes concerning overweight/obesity, research concerning children on this topic remains limited (Paxton & Damiano, 2017; Latner & Stunkard, 2003). For this reason, our finding that preadolescent swimmers had a slightly positive attitude towards obese individuals presents an important contribution to the literature.

This study also examined the relationship between the participants' perceived real and ideal body shapes, BMI, and attitudes toward obese peers. We found a positive correlation between the actual body shape perceived by the male and female swimmers and their current BMI, indicating that the participants possess body awareness. Consistent with our findings, another study has also shown that women tend to perceive their bodies as "too fat" while men perceive themselves to be "too thin" (Mikolajczyk, Maxwell, Ansari, Stock, Petkeviciene & Guillen-Grima, 2010). This bodily awareness is thought to have emerged because swimmers are competitive athletes and, as such, are subjected to strict dietary regimes in addition to their physical training, resulting in constant focus on their bodies. Reel and Gill (2001) reported that female swimmers experienced weight-related stress in the competition environment, emphasizing the common belief that reducing body weight and fat is effective in improving performance.

Another finding of the present study was the correlation between BMI and negative attitudes toward obese peers on the part of the male participants. Studies supporting this finding have identified this particular relationship only in male students. For example, Flint, Hudson and Lavalley (2015), in their study of 2,380 people between the ages of 18-65, reported that men had more negative attitudes towards obese people and a higher level of fat phobia compared to women. Aruguete, Yates and Edman (2006) analyzed the different attitudes towards obesity of their female and male participants. The researchers found that men and women react differently to societal messages promoting thinness and that these reactions occur primarily in the form of body dissatisfaction and reduced food intake in women, as opposed to dislike of obese people in men. Numerous studies have demonstrated that women attach great importance to thinness whereas men attach importance to being bigger, that is, more muscular (Cohane & Pope, 2001). This may explain the positive correlation between BMI and negative attitudes towards obese individuals observed in the male participants in the current study. Studies have also reported that men are aware of society's expectations of them as they grow older with regard

to their physique, one such expectation being a muscular and strong, not merely large; body. Such expectations are even more widespread in athletic environments (McCabe & Ricciardelli, 2004).

#### RECOMMENDATIONS

In conclusion, we found that the preadolescent female competitive swimmers who participated in this study experienced body dissatisfaction, wishing to be thinner, while the male participants overall were satisfied with their body shape. Although attitudes toward obese children did not significantly differ between the female and male participants, the level of negative attitudes toward obese children positively correlated with the BMI of the male swimmers. The limitations of this study should be kept in mind when interpreting the results. Although this is one of the few studies correlating self-perceived real and ideal body shapes and attitudes toward obese children in preadolescent competitive swimmers, the sample size was small, as participants were assembled from only a single swim meet. For this reason, the findings cannot be generalized to all preadolescent competitive swimmers throughout Turkey. Future investigations should consider gathering a more diverse sample group for determining self-perceived body shape and attitudes toward obese children.

#### ETHICAL TEXT

“In this article, journal writing rules, publishing principles, research and publishing ethics rules, journal ethics rules are followed. Ethical approval for this research was granted by the Social and Humanities Ethics Committee of Van Yüzüncü Yıl University (Reference Number: 36389). Responsibility belongs to the author(s) for any violations related to the article.”

#### REFERENCES

- Alpkaya, U. & Çoknaz, H. (2018). Lise öğrencilerinin beden eğitimi dersi tutumlarının, obez akran tutumlarının karşılaştırılması ve arasındaki ilişkinin incelenmesi. *Uluslararası Sosyal Araştırmalar Dergisi*, 11, 374-379.
- Aruguete, M. S., Yates, A. & Edman, J. (2006). Gender differences in attitudes about fat. *North American Journal of Psychology*, 8, 183-192.
- Balcı Çelik, S., Batık, M. V., Özcan, K. & Aksoy, S. (2015). Obez Çocuklara Yönelik Tutum Ölçeği: Geçerlik ve güvenilirlik çalışması / The Attitude toward Obese Children Scale: A study of validity and reliability. *e-Uluslararası Eğitim Araştırmaları Dergisi*, 6(1), 40-53.
- Berryman, D. E., Dubale, G. M., Manchester, D. S. & Mittelstaedt, R. (2006). Dietetics students possess negative attitudes toward obesity similar to nondietetics students. *Journal of the American Dietetic Association*, 106(10), 1678-1682.
- Brennan, M. A., Lalonde, C. E. & Bain, J. L. (2010). Body image perceptions: Do gender differences exist. *Psi Chi Journal of Undergraduate Research*, 15(3), 130-138.



- Button, E. J., Sonuga-Barke, E. J. S., Davies, J. & Thompson, M. (1996). A prospective study of self-esteem in the prediction of eating problems in adolescent school girls: Questionnaire findings. *British Journal of Clinical Psychology*, 35(2), 193-203.
- Carels, R. A., Burmeister, J., Oehlhof, M. W., Hinman, N., LeRoy, M., Bannon, E., ... Ashrafloun, L. (2013). Internalized weight bias: Ratings of the self, normal weight and obese individuals and psychological maladjustment. *Journal of Behavioral Medicine*, 36( 1), 86-94.
- Chalker, A. E. (2014). Weight Bias and Anti-Fat Attitudes: Sources, Impacts, and Prevention Methods. *Inquiries Journal*, 6(10), 2-3.
- Cohane, G. H. & Pope Jr, H. G. (2001). Body image in boys: A review of the literature. *International Journal of Eating Disorders*, 29(4), 373-379.
- Collins, M. E. (1991). Body figure perceptions and preferences among preadolescent children. *International Journal of Eating Disorders*, 10(2), 199-208.
- Coppola, A. M., Ward, R. M. & Freysinger, V. J. (2014). Coaches' communication of sport body image: Experiences of female athletes. *Journal of Applied Sport Psychology*, 26(1), 1-16.
- Dhurandhar, N. V. (2013). Obesity stigma: A persistent problem, a possible solution. *International Journal of Obesity*, 37(11), 1413-1414.
- Dimmock, J., Hallett, B. & Grove, R. (2009). Attitudes toward overweight individuals among fitness center employees. *Research Quarterly for Exercise and Sport*, 80, 641-647.
- Di Pasquale, R. & Celsi, L. (2017). Stigmatization of overweight and obese peers among children. *Frontiers in Psychology*, 8, 524.
- Flint, S. W., Hudson, J. & Lavallee, D. (2015). UK adults' implicit and explicit attitudes towards obesity: A cross-sectional study. *BMC obesity*, 2(1), 31.
- Forhan, M. & Salas, X. R. (2013). Inequities in healthcare: a review of bias and discrimination in obesity treatment. *Canadian Journal of Diabetes*, 37(3), 205-209.
- Greenleaf, C., Chambliss, H., Rhea, D. J., Martin, S. B. & Morrow Jr, J. R. (2006). Weight stereotypes and behavioral intentions toward thin and fat peers among White and Hispanic adolescents. *Journal of Adolescent Health*, 39(4), 546-552.
- Greenleaf, C., Martin, S. B. & Rhea, D. (2008). Fighting fat: How do fat stereotypes influence beliefs about physical education?. *Obesity*, 16(S2), S53-S59.
- Griffin, J. & Harris, M. B. (1996). Coaches' attitudes, knowledge, experiences, and recommendations regarding weight control. *The Sport Psychologist*, 10(2), 180-194.
- Griffiths, S., Murray, S. B., Krug, I. & McLean, S. A. (2018). The contribution of social media to body dissatisfaction, eating disorder symptoms, and anabolic steroid use among sexual minority men. *Cyberpsychology, Behavior, and Social Networking*, 21(3), 149-156.
- Grogan, S. (2006). Body image and health: Contemporary perspectives. *Journal of health psychology*, 11(4), 523-530.

- Hallinan, C. J., Pierce, E. F., Evans, J. E., DeGrenier, J. D. & Andres, F. F. (1991). Perceptions of current and ideal body shape of athletes and nonathletes. *Perceptual and Motor Skills*, 72(1), 123-130.
- Harris, M. & Foltz, S. (1999). Attitudes toward weight and eating in young women tennis players, their parents, and their coaches. *Eating Disorders*, 7(3), 191-205.
- Heider, N., Spruyt, A. & De Houwer, J. (2018). Body dissatisfaction revisited: On the importance of implicit beliefs about actual and ideal body image. *Psychologica Belgica*, 57(4), 158.
- Krentz, E. M. & Warschburger, P. (2011). Sports-related correlates of disordered eating in aesthetic sports. *Psychology of Sport and Exercise*, 12(4), 375-382.
- Kristjánsdóttir, H., Sigurðardóttir, P., Jónsdóttir, S., Þorsteinsdóttir, G. & Saavedra, J. (2019). Body Image Concern and Eating Disorder Symptoms Among Elite Icelandic Athletes. *International Journal of Environmental Research and Public Health*, 16(15), 2728.
- Langdon, J., Rukavina, P. & Greenleaf, C. (2016). Predictors of obesity bias among exercise science students. *Advances in Physiology Education*, 40(2), 157-164.
- Latner, J. D. & Stunkard, A. J. (2003). Getting worse: The stigmatization of obese children. *Obesity Research*, 11(3), 452-456.
- Langdon, J., Rukavina, P. & Greenleaf, C. (2016). Predictors of obesity bias among exercise science students. *Advances in Physiology Education*, 40(2), 157-164.
- Lim, C. L. S., Omar-Fauzee, M. S. & Rosli, M. H. (2011). The body dissatisfaction among female athletes and non-athletes in Malaysia. *Journal of Asia Pacific Studies*, 2(1), 55-69.
- Maurer, D. & Sobal, J. (1999). The social management of fatness and thinness. J Sobal, D Maurer (Eds.), *Interpreting weight: The social management of fatness and thinness*. Aldine de Gruyter, New York (1999), pp. 3-8.
- McCabe, M. P. & Ricciardelli, L. A. (2004). Body image dissatisfaction among males across the lifespan: A review of past literature. *Journal of Psychosomatic Research*, 56(6), 675-685.
- Melching, K., Green, M., O'Neal, E. K. & Renfroe, L. (2016). Body image dissatisfaction: Responses between male and female exercisers and non-exercisers. *International Journal of Exercise Science*, 9(3), 249-257.
- Mellor, D., Fuller-Tyszkiewicz, M., McCabe, M. P. & Ricciardelli, L. A. (2010). Body image and self-esteem across age and gender: A short-term longitudinal study. *Sex Roles*, 63(9-10), 672-681.
- Mikolajczyk, R. T., Maxwell, A. E., Ansari, W. E., Stock, C., Petkeviciene, J. & Guillen-Grima, F. (2010). Relationship between perceived body weight and body mass index based on self-reported height and weight among university students: A cross-sectional study in seven European countries. *BMC Pub Health*, 10(40), 40-51.
- O'Brien, K. S., Hunter, J. A. & Banks, M. (2007). Implicit anti-fat bias in physical educators: Physical attributes, ideology and socialization. *International Journal of Obesity*, 31, 308-314.
- Öztürk, Y., Alpkaya, U., Keskin, K. & Çubuk, A. (2017). Analysis the relationship between the nutritional behaviours of 11-13 year old children and their attitudes towards their obese peers. *The Journal of International Social Research*, 10(53), 622-626.

- Parsak, B. & Saraç, L. (2018). Sporcu öğrencilerin sporcu kimliği düzeyleri ve obez bireylere yönelik tutumlarının incelenmesi. 6th International Congress on Curriculum and Instruction, Kafkas University, Kars, Turkey, pp. 119-124.
- Paxton, S. J. & Damiano, S. R. (2017). The development of body image and weight bias in childhood. *Advances in Child Development and Behavior*, 52, 269-298.
- Peterson, J. L., Puhl, R. M. & Luedicke, J. (2012). An experimental assessment of physical educators' expectations and attitudes: The importance of student weight and gender. *Journal of School Health*, 82(9), 432-440.
- Petrie, T. A. & Greenleaf, C. (2011). Body Image and Athleticism. In: Cash TF, Smolak L. *Body Image: A Handbook of Science, Practice, and Prevention*. 2nd ed. New York: The Guilford Press; pp. 206-213.
- Puhl, R. M. & Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obesity Research*, 9(12), 788-805.
- Puhl, R. M. & Heuer, C. A. (2009). The stigma of obesity: A review and update. *Obesity*, 17(5), 941-964.
- Puhl, R. M. & Heuer, C. A. (2010). Obesity stigma: Important considerations for public health. *American Journal of Public Health*, 100(6), 1019-1028.
- Puhl, R. M. & Latner, J. D. (2007). Stigma, obesity, and the health of the nation's children. *Psychological Bulletin*, 133(4), 557.
- Pont, S. J., Puhl, R. M., Cook, S. R. & Slusser, W. (2017). Section on obesity, obesity society. Stigma experienced by children and adolescents with obesity. *Pediatrics*, 140, e20173034.
- Quittkat, H. L., Hartmann, A. S., Düsing, R., Buhlmann, U. & Vocks, S. (2019). Body dissatisfaction, importance of appearance and body appreciation in men and women over the lifespan. *Frontiers in Psychiatry*, 10, 864.
- Reel, J. J. & Gill, D. L. (2001). Slim enough to swim? Weight pressures for competitive swimmers and coaching implications. *The Sport Journal*, 4(2), 1-4.
- Sagone, E. & De Caroli, M. E. (2014). Relationships between psychological well-being and resilience in middle and late adolescents. *Procedia-Social and Behavioral Sciences*, 141, 881-887.
- Saraç, L. & Parsak, B. (2018). Takım sporlarında sporcu kimliği ve obez bireylere yönelik tutum ilişkisi. 1. Uluslararası Mersin Sempozyumu, Mersin, Türkiye.
- Swami, V., Steadman, L. & Tovée, M. J. (2009). A comparison of body size ideals, body dissatisfaction, and media influence between female track athletes, martial artists, and non-athletes. *Psychology of Sport and Exercise*, 10(6), 609-614.
- Teachman, B. A. & Brownell, K. D. (2001). Implicit anti-fat bias among health professionals: Is anyone immune?. *International Journal of Obesity*, 25(10), 1525-1531.
- World Health Organization [WHO](2018). Obesity and overweight. WHO website. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>.
- Yager, Z., Gray, T., Curry, C. & McLean, S. A. (2017). Body dissatisfaction, excessive exercise, and weight change strategies used by first-year undergraduate students: Comparing health and physical education and other education students. *Journal of Eating Disorders*, 5(1), 10.

- Yılmaz, C. Y. & Dinç, Z. F. (2010). Beden Eğitimi ve Spor Yüksekokulu'nda öğrenim gören genç kadın ve erkek öğrencilerin kilofobi düzeylerinin karşılaştırılması. *Sportmetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 8(1) 29-34.
- Zuzelo, P. R. & Seminara, P. (2006). Influence of registered nurses' attitudes toward bariatric patients on educational programming effectiveness. *The Journal of Continuing Education in Nursing*, 37(2), 65-73.