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ORIGINAL ARTICLE

Emotional Eating Tendencies And General Health In Athletes: Gender Role

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Abstract

565 athletes from different branches (F = 266, M = 299) participated in the study. Emotional Appetite Questionnaire (EMAQ), negative emotion (EMAQNE) and positive emotion (EMAQPE), Emotional Eater Questionnaire (EEQ) which consist three factors (Disinhibition, Type of food and Guilt), and General Health scale short form-12 (GH) were used in the study. According to the results, it was observed that there was a positive correlation between female athletes' Disinhibition, Type of Food, EEQ, and GH). There was a positive correlation between EMAQPE and Disinhibition, Type of Food, and GH. It was seen that there was a positive correlation between Disinhibition, Type of Food, Guilt, and EEQ and GH. When the correlation table of male athletes is examined, there was a positive correlation between EMAQNE and Disinhibition. Type of Food and EEQ, and Guilt and GH. We found that female athletes were sensitive to emotional eating in negative emotions compared to male athletes. It was thought that male and especially female athletes feel guilty after emotional eating behaviour and may have a negative impact on psychological processes.

Introduction:

Physical and psychological competence, which is one of the important determinants of sports performance, increases its importance not only during training or competition but also before the competition. It is known that physical fitness and body composition are important for athletes who need a high level of performance (Marini *et al.,* 2020). Besides, it is important to prepare properly for the team and individual performance (McGill *et al.,* 2012). Researchers (Markser, 2011; Bangsbo, 2008) have stated that it is necessary to focus on the development of physical and psychological preparation and a good performance to improve performance. One of the important factors that change physical and psychological health is eating disorders. In the previous studies (Bratland-Sanda & Sundgot-Borgen, 2013; Schaal *et al.,* 2011), it has seen that the risk of eating disorders in athletes is gradually increasing. Moreover, eating disorders and athletic performance are more associated with the high-performance needs of different elite athletes (Sahin, 2020; De Bruin *et al.,* 2007; Smolak *et al.,* 2000). Emotional eating, which is a type of eating disorder, is a process that occurs with negative psychological processes and triggers people to eat (Van Strien *et al.,* 2017). Suel (2020) has stated that due to poor performance or a social problem emotional eating desire can reveal in athletes. Moreover, emotion regulation skills will be negatively affected by the desire to eat emotionally, resulting in decreased physical fitness or increased psychological problems in athletes (Devonport *et al.,* 2020; Elfhag & Rössner, 2005). In addition to staying away from psychologically negative situations (such as depression, anxiety), well-being may also be affected by mental, social, and physical health (Keyes, 2005; Huppert & Whittington, 2003). When the literature is examined, general health status has been associated with psychological and mental processes such as mental disorders, anxiety, and depression (Weich *et al.,* 2003, 2001).

The need to achieve optimal performance levels in athletes can also hurt athletic performance, personality traits, and mental health (Chang *et al.,* 2020). With the influence of negative emotions, people often turn to foods high in calories during emotional eating and also increase the risk of cardiovascular and diabetes as weight balance changes (Elfhag & Rossner, 2005). It is known that emotional eating and psychological general health status

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are important for athletes, affecting their physical performance in competitions or training, and emotions have different effects according to gender. This study aimed to examine how the emotional eating and emotional appetite levels of athletes from different branches affect their general health in terms of gender.

Materials and Methods:

565 athletes (191 national athletes, 374 non-national athletes, 266 women, 299 men, 397 team athletes, 168 individual athletes, BMI of Female 20.91±2.55 BMI of male 23.39±6.14) from different branches participated in the study. It was filled in by the athletes using an online questionnaire along with an information form about the study.

Emotional Eating Questionnaire (EEQ): the questionnaire was developed by Garaulet *et al.,* (2012) to determine the eating behaviors of overweight and obese people. Adapted into Turkish by Arslantas *et al.,* (2019), the scale consisted of 10 questions and three sub-dimensions (disinhibition 5, type of food 3, and guilt 2), and the scoring type was (Never-0, Sometimes-1, Generally-2, and Always-3). The highest score obtained from the scale indicated that emotional eating behavior was also high. The internal consistency coefficient of the scale was found to be .77 for Disinhibition, .66 for the Type of Food, and .61 for Guilt. In this study, the overall internal consistency coefficient of the scale was found to be .84, .78 for disinhibition, .64 for the type of food, and .72 for the guilt.

Emotional Appetite Questionnaire (EMAQ): EMAQ was developed by Nolan *et al.,* (2010). Turkish adaptation of the scale was made by Demirel *et al.,* (2014). The Cronbach Alpha coefficient of the scales was found to be .73. In this study, the internal consistency coefficient of the scale was found to be .82. Each item of the scale was scored as less (1-4), the same (5), and more (6-9), among 22 questions. The Questionnaire evaluated how emotional eating affects the person in negative/positive emotions (14 items) and negative/positive situations (8 items). When the scores for negative emotions and situations in the scale were added, the negative total score of the emotional appetite questionnaire and the positive total score of the emotional appetite questionnaire was obtained when the scores for positive emotions and situations were collected. The scale indicated in which emotions and situations eating can be dominant. In this study, only the positive/negative emotion part of the scale was used to determine which emotions lead the person to eat.

General Health Scale-12 (GHS-12): GHS-12 was stated that it can be used safely in determining the psychopathology level, mental states, psychiatric disorders, and non-psychotic depression and anxiety symptoms. It was developed by Goldberg & Hiller (1979) and the scale had 12, 28, 30, and 60 questions forms. Turkish validity and reliability study of 12 and 28 question forms was conducted by Kilic (1996). The internal consistency coefficient of the scale was determined as .68. While each question was questioning the symptoms of the last 4 weeks, the items consisted of four options (never, as usual, more often than ever, very often). Two types of methods were used in the evaluation of the scale. In the first method, each item was given a score (0-1-2-3). In the second method, a scoring called GHS type (0-0-1-1) was used. A score of 2 or more in the GHS type scoring was considered to be mentally risky. It was accepted that the higher the score from the scale, meant the higher the risk of the disease. In this study, GHS type scoring was used.

SPSS 26 statistical program was used to analyze the data in the study. Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine whether the data were normally distributed. As a result of the analysis, it was determined that the data were distributed normally. Pearson's correlation analysis was used to examine the relationship between emotional eating, emotional appetite, and general health. Correlation coefficients were determined as .10-.30 weak, .40-.60 medium, .70-.90 strong, and 1 and above perfect (Dancey & Reidy, 2007).

Results:

The differences between the emotional eating, emotional appetite scale negative/positive emotions, general health scales, and the gender of the athletes and the statistical information about the relationship between the general health scale, the emotional eating scale and its sub-dimensions, and the emotional appetite scale negative/positive emotions were included.

Table-1: EEQ, EMAQNE/PE, and General Health Correlation on Female Athletes

n=266	1	2	3	4	5	6	7
EMAQNE	1	.137*	.492**	.339**	.025	.499**	.138*
EMAQPE		1	.148*	.129*	-.010	.132*	.140*
Disinhibition			1	.558**	.240**	.955**	.130*
Type of Food				1	.105	.713**	.139*
Guilt					1	.265**	.418**
EEQtotal	*p<0.05; **p<0.01					1	.161**
GH							1

A weak positive correlation between disinhibition with EMAQPE, the type of food, emotional eating total, and general health scales. Moreover, it was found that there was a positive moderate correlation between Emotional appetite scale positive emotions and disinhibition, type of food, emotional eating total and it was determined that there was a weak positive correlation between the general health scale. It was determined that there was a weak positive correlation between disinhibition, the type of food sub-dimensions and the general health scale, and the correlation between guilt sub-dimension and general health scale was found to be positively moderate. A weak

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positive correlation was found between the emotional eating scale total and the general health scale.

Table-2: EEQ, EMAQNE/PE, General Health Correlation Table of Male Athletes

n=299	1	2	3	4	5	6	7
EMAQNE	1	.195**	.229**	.202**	-.044	.248**	.059
EMAQPE		1	-.032	-.032	-.010	-.044	.014
Disinhibition			1	.500**	.248**	.914**	.084
Type of Food				1	.130*	.712**	.035
Guilt					1	.237**	.340**
EEQtotal						1	.084
GH							1

*p<0.05; **p<0.01

It was determined that there was a weak positive correlation between negative emotions and disinhibition and the type of food. It was observed that there was no relationship between EMAQPE and emotional eating and general health scale. A weak positive correlation was found between the emotional eating sub-dimension of guilt and the general health scale.

Discussion:

Physiological and psychological complexities that trigger eating disorders can disrupt physical and mental health (Anderson & Petrie, 2012). Therefore, eating habits and emotional states can change the eating tendencies of athletes, moreover, they can affect the general health level. In this study, the relationship between emotional eating, which was one of the types of eating disorders in terms of gender and emotion interaction, and emotional eating tendencies in athletes and general health were examined.

In this study, when the relationship between the emotional eating tendencies of the team and individual female and male athletes and their general health levels was examined. According to female athletes results, there was a moderate positive relationship disinhibition with EMAQNE and emotional eating and a positive weak relationship with the type of food and EMAQPE. It was observed that there was a weak positive relationship between disinhibition, the type of food and emotional eating. It was determined that there was a weak positive relationship between disinhibition with EMAQNE and emotional eating, type of food and emotional eating of male athletes with EMAQNE. Lindeman & Stark (2001) stated that emotional eating was generally associated with negative emotions. The sad mood was a determinant of emotional eating. (Kornacka *et al.,* 2020). Van Strien *et al.,* (2013) stated that overweight people eating as a coping strategy against stress and negative emotions. Sundgot-Borgen & Torstveit (2004) emphasized that female athletes had higher eating disorders than men in the study, which was one of the most comprehensive studies on eating disorders and comparing different types of eating disorders. Researchers (Larsen *et al.,* 2006; van Strien, 2005) was stated that women's emotional eating levels were high. Kenardy *et al.,* (2003) examined the emotional relationship between male and female before eating and after eating, and it was found that female's negative and positive moods before eating caused an increase in a positive mood after eating. He also stated that there was a decrease in the negative mood of males after meals, but females were more emotionally prone to eating. Similarly, Macht *et al.,* (2004) found that generally negative emotions trigger eating as well as positive emotions. In other studies in the literature (Joy *et al.,* 2016; Varnes *et al.,* 2013), it was stated that the risk of eating disorders was higher in female athletes compared to male athletes and non-athletes women. In the current study, when the relationship of female athletes and male athletes with emotional eating was examined, the results show that female athletes had a higher relationship with emotional eating than men. It was found that negative emotions direct male athletes to eat, but female athletes were more susceptible to eating more than negative emotions while encouraging them to eat with positive emotions. It can be said that the emergence of the urge to eat in both positive and negative emotions was due to the lack of emotion regulation skills of female athletes. Researchers have reported that people with emotion regulation skills have the ability to accurately describe and change emotional experience. (Aldao & Nolen-Hoeksema, 2010; Grantz & Roemer, 2004). Researchers (Leppanen *et al.,* 2018; Medina-Pradas *et al.,* 2012) stated that lack of emotion recognition was associated with eating disorders. Shriver *et al.,* (2016) stated that athletes who were inadequate in emotion regulation were more frequently exposed to eating disorders.

In this study, the relationship between EMAQNE, EMAQPE, emotional eating and general health of female and male athletes were examined. According to the results of the study, a weak relationship was found between feelings of guilt and general health in the emotional eating sub-dimension of male athletes. It was observed that there was a weak relationship between negative/positive emotions, disinhibition with EMAQNE and emotional eating, type of food and emotional eating total and general health of female athletes. However, it was found that there was a moderate relationship between the guilt subscale and general health. The concept of emotional eating emerged with the psychosomatic theory (Bruch, 1964), the difference between physiologically felt hunger and hunger caused by negative emotions was not noticed by emotional eaters. (Adriaanse *et al.,* 2011). While Greeno & Wing (1994) generally negative emotions should create a physiological environment that makes people feel full, emotional eaters tend to eat when they encounter negative emotions. Different researchers were stated that depression poses a high risk in conditions such as increased appetite, weight gain, and obesity (DSM-5; American Psychiatric Association, 2013; Luppino *et al.,* 2010; Blaine, 2008).

However, Strien *et al.,* (2016) stated that emotional eating had a higher mediating effect on depression and body mass index in women compared to men. Similarly, Suel (2020) stated that female basketball players had higher levels of disinhibition with EMAQNE and emotional eating, type of food, guilt, and emotional eating compared to men. van Strien (2005) stated that women tend to eat emotionally more than men. Lazarevich *et al.,* (2016) stated that emotional eating had a mediating effect between depression and BMI, and it constitutes a significant part of this indirect effect with women (25.0%) and men (23.1%). Similarly, previous studies (Clum *et al.,* 2014; Goldschmidt *et al.,* 2014) emphasized that there was a mediating effect between emotional eating, depression, and future weight gain. Again, van Strien *et al.,* (2016) found that emotional eating behaviors in women had a mediator effect between depression and BMI. Lazarevich *et al.,* (2016) emphasized that the effect of depression on motivation to eat can be both positive and negative, however, melancholic depression may decrease or increase appetite and a distinction should be made between depression with atypical characteristics that provide appetite increase. It was the relationship between feelings of guilt and general health that had an important place in our study for both female and male athletes. Although the relationship between feelings of guilt and general health was weak in men, it was medium in women. Bennett *et al.,* (2013) stated that stress was one of the primary triggers for emotional eating, and at the same time, guilt emerges after eating behavior. In addition, after emotional eating behavior, women stated that they felt more guilt than men. Similarly, Wallis & Hetherington (2009) found that women felt more guilty after certain foods. Hurst *et al.,* (2017) stated that the introverted regulation caused by the feeling of guilt or embarrassment may be associated with the body image of women and exercise goals. As seen in the literature, female athletes feel more negative psychological events than men, leading to emotional eating tendencies.

When the literature was examined as the limitations of the study, studies on emotional eating and emotions were obese people, diabetes patients, or university students. There were no studies examining the relationship between athletes' (especially gender role) emotional eating, negative/positive emotions, and general health. According to the results of our study, the relationship between negative emotions and emotional eating of male athletes showed a weak relationship. But it turned out that this situation was higher in female athletes. Felt of guilt after emotional eating affected the psychological processes of female and male athletes. How this effect will affect mental or physical performance should be revealed by future studies.

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