Analysis of effects of nutrition and physical appearance on self-confidence in women who exercise

Zekiye Basaran

Kocaeli University, Sport Science Faculty, Department of Sport Management, Kocaeli Turkiye

Abstract. The purpose of this study was to analyze the effect of nutrition and physical appearance perfectionism on self-confidence in women who exercise. This is an experimental study without a control group. The research sample consisted of 36 women. The study was carried out for 10 weeks, 3 days a week, and 1 hour a day. The program consisted of step, pilates, zumba, yoga, and cardio work. Data were obtained face-to-face and online. Personal information form, women self-confidence scale, physical appearance perfectionism scale, and the three-factor eating questionnaire were utilized as data collection tools. SPSS 25 packaged software analyzed the data obtained from scales. Paired Sample t-test was applied to data showing normal distribution while the Wilcoxon test was applied to data showing non-parametric distribution. There also was conducted a correlation analysis to determine the relationship between scales. According to research results, there are decreases in weight, waist measurement, and BMI (Body Mass Index) values of the participants. While there is a decrease in all averages in nutritional status, a significant difference can be seen between uncontrolled eating and conscious restriction pre/post-test. There also is a significant difference in the physical appearance perfectionism total point and imperfection sub-dimension. A significant difference can be observed in total and social sub-dimension while there are decreases in self-confidence points. There is a significant relationship between women's self-confidence and physical appearance perfectionism. Finally, exercise and conscious nutrition cause a decrease in weight, body mass index, and waist measurement, while it creates a positive effect on physical appearance. These effects also increased the level of self-confidence in women. There is a significant relationship between physical appearance and self-confidence. It is recommended that all women be directed to sports activities so that they can be strong and self-confident.

Key words: Exercise, nutrition, physical appearance, self-confidence

Introduction

The isolated life during the pandemic has changed eating habits while limiting movements. In this case, it has started to create physical appearance problems with weight gain. Women who care about their physical appearance have started to exercise with the lifting of the curfews.

Exercise is planned, structured, repetitive, and sustained movements that are specifically designed to improve fitness and health. Exercise causes weight loss when combined with diet in overweight individuals. Exercise beautifies the body by protecting muscle tissues and reducing the amount of fat. Weight gain (BMI>30) in recent years is related to decreased physical activity rather than increased energy intake. Increasing body mass increases, the risk of developing many diseases, including heart diseases and cancer (1). Much as it varies according to age, it is normal for the "Body Mass Index" (BMI) = 18.5-25 kg/m² in general. The formula for BMI is BMI = weight (kg)/height (m²). The ratio of waist circumference to hip circumference (cm) is another important indicator.

People consciously limit their food intake to keep weight under control or to lose more weight. They endeavor to control the level of eating when they are emotional or when they feel hungry (2). However, two important determinants of a healthy life are adequate and balanced nutrition and regular physical activity and exercise (3), These components also are the main factors for minimizing age-related health risks (4). Moreover, they are complements that contribute to the physiological, mental, and social well-being of individuals (5).

Physical activities have a significant impact on people's internal and external development. In some studies, in the literature, it has been reported that participating in sports activity programs reduces anxiety and tension, and increases self-confidence and body image (6). In some studies, developments such as feeling positive emotions, giving physical value to oneself, feeling proud of oneself, and seeing one's own body image as perfect are observed thanks to physical activity (1).

The perception that women should have a perfect body, which is placed in the subconscious, causes psychological pressure. Exercises such as Yoga, Tai chi, and Plates, which have both physical and psychological benefits, are holistic health approaches (7). Pilates is a physical fitness program that was developed by Joseph Hubertus Pilates to shape the body, improve balance and coordination, and increase flexibility at the same time. It is stated that people who participate in these programs feel calmer, full of energy, and refreshed, and their awareness increases (8). According to Plates, a difference is felt after 10 sessions, and the difference is visible at the end of 20 sessions. At the end of 30 sessions, a completely new perfect body is obtained (9).

For Stoeber (10), perfectionism is a multidimensional personality tendency towards an individual's behavior to make it perfect. Just as a person has a psychological sense of being a perfectionist, she also needs to be physically perfect (6). Individuals who are satisfied with their physical condition feel better psychologically and their self-confidence is higher. Kirk (11) also suggested in the UNESCO report that girls and women should be empowered by directing them to well-designed sports programs to gain self-confidence.

Self-confidence means that a person finds himself sufficient, is satisfied with himself, and is in harmony with his environment. Namely, it is a state of feeling good as a result of developing positive feelings towards oneself (12). In other words, it is knowing that a person has control and dominance over his own world with his body and behavior (13,14). For Kasatura (15), self-confidence is knowing one's own abilities, self-confidence, and self-love (16). Self-confidence is the individual's confidence in his own abilities, judgment, power, and decisions, and believing that he can achieve a certain activity (17).

People with high self-confidence are more positive and more challenging towards life. They do not give up easily in the face of difficulties. They are open to different experiences and their communication with people is good in general. People with low self-confidence cannot easily participate in social communities, they fear that people will ridicule or belittle them. So, they feign excuses for themselves and claim that they are not beautiful, physically deficient, cannot speak well, and are weak in terms of culture. They tend to see themselves as worthless and often exhibit negative attitudes and behaviors in social communication (18,16,6).

For Lindenfield (19), self-confidence is divided into two as internal self-confidence and external self-confidence. While internal self-confidence is dominated by the belief that the person is good, external self-confidence has a structure that reflects the individual's self-confidence to the outside world as appearance and behavior.

It is stated that success in men and social relations in women affect self-confidence more. Self-confidence in women is an important emotional requirement and one of the basic elements of psychological life (20). Women who have low levels of self-confidence feel worthless and their self-esteem decreases at the same time (21). Lack of self-confidence also causes eating disorders, severe stress, chronic pain, and diseases (22). According to Sari (23), a person's self-confidence increases if she engages in activities that she likes, does something that she believes to be successful and that she can use her talents, and gets the reward of her efforts (24). Even expectations about the healing effects of physical exercise can make a difference in self-confidence (25).

The aim of this study was to investigate the effects of nutrition and physical appearance perfectionism on self-confidence in women who exercise. Hypotheses:

- Nutrition and exercise have an effect on physical appearance in women.
- Physical appearance also has an effect on self-confidence.
- There is a relationship between physical appearance and self-confidence in women.

Material and Method

Research Method

This study used the quasi-experimental model that is one of the quantitative research methods. We have a practice group and no control group. The program prepared is applied to the practice group after the pre-test. Post-tests are performed at the end of the program.

Research Group

The research group was specified by the convenience sampling method. The practice group of the study consisted of 36 women who participated in the course of the sport opened in Izmit Public Education Center and voluntarily supported the work. This study was planned as 12 weeks but it was completed within 10 weeks because of participants in the group who were infected with the coronavirus.

Data Collection

Data were obtained from questionnaires/scales. Face-to-face scales were applied at the beginning of the program. However, posttests could be received online. The program was able to continue for a total of 10 weeks, 3 days a week, 1 hour a day. The program consisted of step, pilates, zumba, cardio and yoga.

Data Collection Tools

Personal information form that was prepared by the investigator, woman self-confidence scale, physical appearance perfectionism scale, and three-factor eating questionnaire were used as data collection tools.

Woman Self-Confidence Scale: Woman Self-Confidence Scale that was developed by Yurtcicek Erguntop (24) consists of 5 sub-dimensions as Satisfaction (2 items), Social relations (7 items), Internal self-confidence (11 items), Appearance (4 items), and Performance (14 items). The scale that consists of 38 items is a 5 point Likert scale (Strongly agree=5, Strongly disagree=1). 7th, 8th, 13th, 14th, 22nd, 23rd, 30th, 31st items are inversely graded. Items are graded as "Strongly agree=1, Strongly disagree=5" when the points are reversed. The "Total Cronbach alpha value" of the scale is 0,97; these values vary from 0,77 to 0,94 in the sub-dimensions of the scale. "There is no definite limit to low or high self-confidence". Therefore, we can make an evaluation based on the high or low level of self-confidence according to the average. It is interpreted that "as the points increase, self-confidence levels increase at the same time". The same situation is valid for the sub-dimensions too (24). Cronbach Alpha total value is determined as ,94 for this study.

Physical Appearance Perfectionism Scale (PAPS): Physical Appearance Perfectionism Scale was developed by Yang and Stoeber. There are two sub-dimensions in PAPS. The Anxiety of Being Flawed sub-dimension consists of 7 items, and the Hope for Perfection sub-dimension consists of 5 items. The internal consistency coefficient for the anxiety of being flawed sub-dimension is .88, while the same coefficient for Hope for Perfection is .84. Items in Physical Appearance Perfectionism are answered with the expressions of (1) strongly disagree (5) strongly agree. Kolsallayan performed the validity and reliability study of the scale for Turkish. Cronbach Alpha coefficients of the scale were found as 0,90 for the anxiety of being flawed, 0,93 for Hope for Perfection (26). This study determined physical appearance total Cronbach Alpha value as ,92 (anxiety of being flawed sub-dimension is, 90 while Hope for Perfection is ,80).

Three-Factor Eating Questionnaire (TFEQ): This scale was developed by Karlsson et al., to determine the eating habits in obese. This scale also consists of sub-dimensions of Conscious Restraint, Uncontrolled Eating, and Emotional Eating. The scale with 18 questions was translated into Turkish by Kırac et al., (2). The first 13 questions are in 4-point Likert type

(1 definitely true–4 false). Four options were given to questions 14 and 17. Personal scoring is required for Question 18. The internal consistency coefficient was found to be .72 (2). In this study, the Cronbach Alpha value was found to be ,81 in total.

Analysis of Data

Data were analyzed by SPSS 25 packaged software at a 0,05 significance level. Paired Sample t-test was applied to data showing normal distribution while the Wilcoxon test was used for data showing non-parametric distribution. The relationship between scales was specified by the correlation analysis.

Table 1. Demographic attributes table

Age	F	%
18-24	4	11,1
25-34	5	13,9
35-44	13	36,1
45-54	8	22,2
55-64	5	13,9
65 and over	1	2,8
Total	36	100,0
Education	**F**	**%**
Primary Education	11	30,6
Middle School	6	16,7
High school	9	25
University	10	27,8
Total	36	100

Ethical Standards and Informed Consent

Ethics Committee approval was obtained for this study from the Kocaeli University Social Sciences Institute Research Committee numbered 2021/E-10017888-100-86064. Furthermore, informed consent form was acquired from all participants.

Results

According to Table 1, participating women are between the ages of 18-65 and over, and the participants are mostly between the ages of 35-54 (58.9%). Most of them are primary school graduates (30.6%) and bachelor (27.8%).

According to Table 2, the height of the participants is between 148-168 cm (158.69±5,115). Their first measurement weight is 74.11.50±15.85, the last measurement weight is 70.69±14.85 kg.

According to Table 3, while the initial data of the Body Mass index is 29.50±6.36, the final data is 28.12±5.93. There is a statistically significant difference between the first and last measurements (p=0,000).

Waist measurements are 88.11±13.45 in the first measurement and 82.94±11.90 in the last measurement. There is a statistically significant difference between the first and last measurements (p=0,000).

According to Table 4, it is seen when the pretest (11,50±3,79) and post-test results (9,92±3,28) of uncontrolled eating sub-dimension are reviewed that

Table 2. Descriptive statistics of participants' height and weight

Participants' height and weight	N	Min	Max	$\bar{X}$	SD
Height (cm)	36	148	168	158,69	5,11
Weight first measurement (Kg)	36	39,0	127,4	74,11	15,85
Weight last measurement (Kg)	36	41	120	70,69	14,85

Table 3. Descriptive statistics of participants' body mass index and waist measurements

BMİ and Waist	N	Min	Max	$\bar{X}$	SD	T* / Z	P
BMİ first measurement	36	14,90	50,40	29,50	6,36	9,08*	,000
BMİ last measurement	36	15,6	47,5	28,12	5,93		
Waist first measurement (cm)	36	60	136	88,11	13,45	-5,17	,000
Waist last measurement (cm)	36	60	124	82,94	11.90		

there is a statistically significant difference at 0,05 level (p=0,010). A negatively directed significant difference can be seen between pretest and post-tests (16,47±3,65/18,11±3,35) of conscious restraint sub-dimension (p=0,000). There is no significant difference in other dimensions and total. However, a decrease is observed in eating levels based on averages.

According to Table 5, it is seen when physical appearance perfectionism pretest/posttest results are reviewed that there is a statistically significant difference at 0,005 level (36,06±10 / 29,07±8,74: p=0,000). There also is a significant difference in the anxiety of being flawed pretest/posttest comparison (22,19±7,21/ 16,56±6,67; p=0,000) while there is no significant difference in the pre/post-test comparison of hope for perfection subscale.

According to Table 6, it is seen when the pretest/posttest total points of women self-confidence scale are reviewed that there is a statistically significant difference at 0.05 level (71,78±24,43/81,83±23,64; p= 0,010). This difference is in social relations sub-dimension (11,56±4,98/15,14±4,56; p= 0,000). There is no significant difference in other dimensions. However, an increase in all dimensions can be seen considering averages.

According to Table 7, there is a statistically significant relation between women's self-confidence and physical appearance total post-tests at 0,05 level (p= 0,34; p=0,05). There is no relation between nutrition and physical appearance with self-confidence.

Discussion

Participants differ in terms of occupational group, marital status, and having children in this study that was conducted to examine the effects of nutrition and physical appearance on self-confidence in women who exercise. Participants are between the ages of 18-65, mostly 35-54 (36%). They are a wide range of women, from primary school to graduate education. The average height is about 160 cm.

Table 4. Descriptive statistics and p values of total and sub-dimensions of eating questionnaire and pre-post tests

Nutrition	N	Min	Max	$\bar{X}$	SD	T^* / Z	P
Nutrition Total Pre-test	36	28	62	44,00	8,40	$1,05^*$	,301
Nutrition Total Post-test	36	23	64	42,44	9,02		
Uncontrolled eating Pre-test	36	6	20	11,50	3,79	$2,71^*$	,010
Uncontrolled eating Post-test	36	5	17	9,92	3,28		
Emotional Eating Pre-test	36	3	12	7,47	3,08	-1,74	,081
Emotional Eating Post-test	36	3	12	6,72	3,16		
Conscious Restriction Pre-test	36	9	23	16,47	3,65	$-3,97^*$	,000
Conscious Restriction Post-test	36	8	23	18,11	3,35		
Hunger Sensitivity Pre-test	36	4	16	8,56	3,54	-1,83	,066
Hunger Sensitivity Post-test	36	4	16	7,69	3,59		

Table 5. Descriptive statistics and p values of total and sub-dimensions of the pre/post-tests of physical appearance perfectionism scale

Physical Appearance Perfectionism	N	Min	Max	$\bar{X}$	SD	T	P
Physical Appearance PerfectionismTotal Pre-test	36	16	60	36,06	10,00	4,26	,000
Physical Appearance Perfectionism Total Post-test	36	12	50	29,97	8,74		
Sub-Dimensional/Concern Being Flawed Pre-Test	36	7	35	22,19	7,21	6,10	,000
Sub-Dimensional/Concern Being Flawed Post-Test	36	7	33	16,56	6,67		
Sub-Dimensional/Hope for Excellence Pre-Test	36	5	25	13,86	5,32	,532	,598
Sub-Dimensional/ Hope for Excellence Post-Test	36	5	23	13,42	4,77		

Table 6. Descriptive statistics and p values of total and sub-dimensions of female self-confidence scale pre/post tests

Woman Self-Confidence	N	Min	Max	$\bar{X}$	SD	T*/ Z	P
Self-Confidence Total Pre-test	36	38	142	71,78	24,43	2,58	,010
Self-Confidence Total Post-test	36	43	144	81,83	23,64		
Sub-Dimensional/ Satisfaction Pre-Test	36	2	10	3,31	1,98	,86	,387
Sub-Dimensional/ Satisfaction Post-Test	36	2	10	3,58	1,77		
Sub-Dimensional/ Social Relations Pre-test	36	6	24	11,56	4,98	3,70	,000
Sub-Dimensional/ Social Relations Post-test	36	9	27	15,14	4,56		
Sub-Dimensional/ Inner Self-confidence Pretest	36	11	43	20,81	8,40	1,59	,110
Sub-Dimensional/Inner Self-confidence Posttest	36	11	40	22,75	7,12		
Sub-Dimensional/ Appearance Pre-Test	36	4	16	8,94	3,30	2,02*	,050
Sub-Dimensional/ Appearance Post-Test	36	6	14	10,22	2,36		
Sub-Dimensional/ Performance Pre-Test	36	14	52	27,17	9,06	,59	,111
Sub-Dimensional/ Performance Post-Test	36	14	59	30,14	10,48		

Table 7. Relationship among nutrition, physical appearance perfectionism, and self-confidence

Scales		Nutrition Total Post-test	Physical Appearance Perfectionism Total Post-test	Self-Confidence Total Post-test
Nutrition Total Post-test	r	1	,134	,215
	p		,434	,208
	N	36	36	36
Physical Appearance Perfectionism Total Post-test	r	,134	1	,354*
	p	,434	.	**,034**
	N	36	36	36
Self-Confidence Total Post-test	rho	,203	,354*	1
	P	,234	**,034**	
	N	36	36	36

*. Correlation is significant at the 0.05 level (2-tailed).

While the first measurement weight average is 74.11±15.85, the last measurement weight average is 70.69±14.85 kg. This decrease also showed itself with body mass index and waist measurements. The body mass index preliminary data is 29.50±6.36, while the final data is 28.12±5.93. There is a statistically (p=0.000) significant difference between the first measurement/ the last measurement.

Overweight and obesity ranges are represented by body mass index (BMI) for adults, which is calculated using weight and height. BMI correlates with body fat for many people. According to these criteria, people with a BMI greater than 18 and less than 25 are "normal weight". People over 25 and under 30 are "overweight" while those with a BMI of 30 and above are considered "obese" (2).

Regarding waist measurements, the first measurement is 88.11±13.45, while the last measurement is 82.94±11.90. There is a statistically significant difference between the first and last measurements (p=0.000). The exercises have a positive effect on the weight, waist, and body mass index of women in 10 weeks. For Pilates, a difference started to be seen after 20 sessions. We can say that the decrease in waist, weight, and BMI occurred as a result of starting to exercise with the removal of curfew restrictions on the one hand, and paying attention to nutrition on the other.

During the pandemic, the scores were found to be significantly higher in healthy lifestyle behaviors of female referees who play sports, including the dimensions of physical activity, psychological development, and interpersonal relations with attitudes, knowledge, and emotion scores towards healthy eating (27). The quarantine process has led to results such as getting away from daily routine life and a more sedentary lifestyle. With the increase in the time spent at home, the news of the pandemic, which is constantly listened to and watched, has triggered concerns. The desire to consume food due to the emotional state has increased. Undesirable increases in body weight have been observed as a result of decreased physical activity (28). It has increased unhealthy eating behavior in quarantines.

There is seen a statistically significant difference at 0,05 level (p=0,010) when participants' uncontrolled eating, one of the sub-dimensions of the nutrition questionnaire pre-test (11.50+3.79) and post-test results (9.92+3.28) are examined. There is also a negatively directed significant difference (p=0.000) between the pre-test and post-test (16.47+3.65 / 18.11+3.35) of the conscious restraint sub-dimension. No significant difference is found in other dimensions and total. However, regarding averages, there is a decrease in the level of eating. While a controlled eating habit is acquired, it is seen that there is also conscious restriction. While the body is shaped and mobility increased with physical movement, fat decreases with proper nutrition.

As the level of nutrition knowledge increases, conscious eating habits also increase. Kartal et al., conducted a study with adolescents and emphasized that psychological eating behavior points of students decreased and the tendency to be physically active increased with conscious nutrition (5). Adolescents who exercise regularly have better healthy eating habits and that they eat more consciously than those who do not exercise, and there is a relationship between them (29). Again, according to their results, those with high life activity among university students exhibit healthier eating behaviors compared to other groups (4).

We can say when the previous studies are researched that overweight individuals are unhappy because they move less, and as a result of this lifestyle, women experience more mental problems than men

(30). In fact, body image is the mental reflection of the physical appearance of individuals and how others see them (31). The fact that this appearance is not in the desired way can negatively affect the physical and psychological health of people. Dalbudak et al., (32) surveyed B2-B3 visually impaired athletes and highlighted that there is a significant and strong positive relationship between body image and nutrition; their thoughts or ideas about body image are highly effective on nutrition. Akyol et al., (30) stated that in addition to normal women, visually impaired women are also concerned about the deterioration of their physical appearance, and they have to struggle with psychological and sociological problems.

There is found a statistically significant difference when the physical appearance perfectionism pre/post-test results of the participants are examined (36.06±10/29.07±8.74: p=0.000). While there is no significant difference in the pre/post-test comparison of the hope for perfection subscale of the scale, there is a significant difference in the pretest/posttest comparison of anxiety of being flawed (22.19±7.21/16.56±6.67; p=0.000). It takes a long time for the body to look perfect. This result shows us that the participants are satisfied with the change and appearance in their bodies after a two-month workout.

Exercise and sports affect physical appearance positively. Despite this, women who have a negative self-perception in terms of physical appearance avoid participating in physical activity environment (33). However, support is taken from exercise to shape the body. Turk (34) stated that regular bosu exercises in sedentary women contributed positively to body image; there is created a statistically significant difference between pre-measurement and post-measurement scores in terms of body image values. Much as women express that they do physical activity to be healthy, they also have expectations of having a good physical appearance as a result of activities (35). Exercise is part of the beauty discourse that emphasizes the need to reach the ideal body, which means a lean and firm body.

It can be said that losing weight, keeping the weight in balance and having a beautiful appearance serve the purpose of being healthy for women, and for this reason, women who do physical activity or sports see sports as a means of beautification (36).

Self-confidence increases with having a good appearance; this appearance provides an advantage in terms of being at peace with oneself. It is expressed in the study conducted by Yalcın and Ayhan that physical appearance perfectionism and psychological well-being levels of women participating in sportive recreational activities have a significant effect on their internal and external self-confidence (6). The positive effect of health and physical appearance on each other causes women to show more interest in these activities (35) and reduces social appearance concerns (33). Alanoglu et al. (37) suggested that adult women regularly participate in sportive recreational activities to lead a happy and active life.

The person participating in the sports activity becomes happy, enjoys, and increases in energy level. Thus, self-confidence will increase along with happiness and pleasure. For reports, happiness hormones of individuals participating in physical activities increase, and therefore positive results are obtained in terms of self-confidence. (38). According to Zorba (39), many positive effects can be observed in individuals, such as the development of self-esteem and self-confidence, by doing sports regularly.

There is a significant difference (71,78±24,43/81, 83±23,64; p=0,010) in the comparison of women self-confidence pre/post-test total points. This difference is in social relations (11,56±4,98/15,14±4,56; p=0,000) sub-dimension as well. There is no significant difference in other dimensions. However, an increase can be seen in all dimensions considering averages.

There are studies in the literature that jibe with this result. Ekinci et al. (40), Sun and Eroglu (41), surveyed high school students who play sports and who do not. They expressed that self-confidence in students who played sports is higher. According to findings, there are significant differences in internal, external, and total self-confidence points of girls who play sports and who do not. Self-confidence points are higher for girls who play sports. It can be said based on this result that sports create positive effects on the level of self-confidence (42,16). Sebire et al., (43) made research and expressed that exercising physically increases the self-worth and confidence of the person.

Can and Kacar (44) concluded that female athletes have a higher level of external self-confidence compared to male athletes. According to Isıklar (45), women pay more attention to the level of physical quality of life than men; however, in the case of being obese, a lack of self-confidence is seen in women, especially. It is expressed in Wiederman's (46) study that when women's weight and body appearance are at the desired level, their self-confidence is high.

This study which reviewed whether there is a relation between nutrition, physical appearance, and self-confidence found a statistically significant relation at 0,05 level between women self-confidence and physical appearance (p=0,34; p=0,05) post-tests total points. There is no relation between nutrition and physical appearance with self-confidence.

Conclusion

In conclusion, exercise and conscious eating cause a decrease in weight, body mass index, and waist measurements while there occurs a positive effect on physical appearance. Relevant effects increase the self-confidence level in women. We can also talk about a significant relationship between physical appearance and self-confidence.

Suggestions:

- The longer duration of this study, which was carried out in a limited time due to Covid-19, may bring the expectation to a better point.
- Getting personal support with regular measurements in nutrition can be beneficial and give the person a conscious eating habit.
- Conscious nutrition with exercise provides psychological relief and happiness as well as physical appearance attractiveness. This will increase their self-confidence at the same time.
- Girls and women should be directed to sports activities in order to have a place in society, to be strong and self-confident.

References

1. Akyol B, Bilgic P, Ersoy G. Physical activity, nutrition and healthy living. Klasmat printing, Ankara, 2008; 8-20.
2. Kırac D, Kaspar EC, Avcılar T, et al. A new method in investigation of obesity-related eating behaviors 'three-factor eating questionnaire'. MUSBED, 2015; 5(3): 162-169.
3. Keskin M. Investigation of eating habits in university students in terms of physical activity and various variables (Erzincan province example). Unpublished Master Thesis, Binali Yıldırım University, Institute of Health Sciences, Department of Physical Education and Sports, Erzincan, 2019.
4. Yurt S, Ozdemir T. Determination of nutrition exercise behaviors of university students. JERN, 2020;17(3): 238-43.
5. Kartal FT, Burnaz NA, Yasar B, Saglam S, Kıymaz M. Investigation of the effect of nutrition knowledge levels of adolescents on their nutritional and exercising habits. CBU J. Physical Education and Sport Sci, 2019; 14(2): 280-295.
6. Yalcın I, Ayhan C. The effect of physical appearance perfectionism and psychological well-being on self-confidence in women participating in sportive recreational activities. SPORMETRE, 2020; 18(1): 205-212.
7. Khalsa SB. Yoga as a therapeutic intervention: A bibliometric analysis of published research studies. IJPP Indian J Physi and Pharma, 2004; 48: 269- 285.
8. Wells C, Kolt GS, Bialorcerkowski A. Defining pilates exercise: a systematic review. Complementary Therapies in Medicine, 2012; 20(4): 253-62.
9. Korkmaz C. Investigation of the effect of clinical pilates exercises on physical fitness, psychosocial condition and exercise belief in healthy adults: randomized controlled trial. Unpublished Master's Thesis, Pamukkale University, Institute of Health Sciences, Department of Physical Therapy and Rehabilitation, Denizli, 2020.
10. Stoeber J. The psychology of perfectionism: An introduction. In J. Stoeber (Ed.), The psychology of perfectionism: Theory, research, applications, Routledge: London, 2018.
11. Kirk, D. Empowering girls and women through physical education and sport. Advocacy BRİEF. UNESCO Asia and Pacific Regional Bureau for Education: Bangkok, Thailand, 2012.
12. Akagunduz N. The concept of self-confidence in human life. Istanbul: Umraniye Guidance and Research Center Directorate Publications. Number:1. Ankara, 2006.
13. Kurtuldu PS. Examination of the relationship between the self-confidence levels of primary school administrators and their leadership levels. Unpublished Master Thesis, Yeditepe University, Institute of Social Sciences, Department of Educational Administration and Supervision, Istanbul, 2007.
14. Goknar O. Gaining Confidence, 2nd Edition, Friend Publishing House, Ankara, 2010.
15. Kasatura İ. Personality and self-confidence. Evrim Publishing House, Istanbul, 1998.
16. Gundogdu H. Investigation of self-esteem and self-confidence values of 12-14 years old girls who are in the sport teams of school or who are not in the sport teams of school. Unpublished Master's Thesis, Maltepe University Institute of Social Sciences, Department of Psychology Programme, Istanbul, 2019.
17. Feltz DL. Self confidence and sport performance. ESSR Exerc Sport Sci Rev., 1988; 16: 423-458.
18. Basoglu Turan, S. Examination of the relationship between test anxiety and self-confidence in adolescence. Unpublished Master's thesis, Maltepe University, Institute of Social Sciences, Department of Human Sciences and Philosophy, Istanbul, 2007.
19. Lindenfield G. Raising self-confident children, (Trans. E. Yüksel), Yakamoz Publications, Istanbul, 2011.
20. McKay M. and Fanning, P. Self-Confidence. (8th Edition), Friend Publishing House, Ankara, 2014.
21. Tarhan N. Women's Psychology. (9'nd Edition). Generation Publications, Istanbul, 2019.
22. Fennell M. Discover self-confidence. (Azizerli N, Miray S. Trans.) 3rd Edition, Psychonet Publications, Istanbul, 2017.
23. Sarı E. Self-confidence in women. Net Media Publishing, Antalya, 2016.
24. Yurtcicek Erguntop S. Development of women's self-confidence scale. 2019; Istanbul University-Cerrahpasa, Institute of graduate studies, Women Health and Disease Nursing Departmant. Unpublished Doctoral Thesis. İstanbul, 2019.
25. Uney R. Erim BR. The effects of regular physical exercise on violent behavior, coping with stress and self-confidence in male prisoners of a closed prison. Anatolian J Psychi, 2019; 20(6): 619-626.
26. Kolsallayan A. The effect of physical appearance perfectionism and psychological well-being levels of exercise participants on their motivation to participate in exercise. Unpublished Master's Thesis, Ege University, Institute of Health Sciences, Department of Psycho-Social Fields in Sports, İzmir, 2017.
27. Karagun E, Selvi S, Sarper Kahveci M. Analysis of healthy life styles and nutritional attitudes of football referees during the pandemic. Progr Nutr [Internet]. 2021 May 3 [cited 2021Dec.19];23(S1):e2021176.https://mattioli-1885journals.com/index.php/progressinnutrition/article/view/11401.
28. Eskici G. COVID-19 Pandemia: Nutrition recommendations for quarantine. Anadolu Clinic J Med Sci, 2020; 25(1): 124-129.
29. Bebis H, Akpunar D, Ozdemir S, Kılıc S. Assessment of health promotion behavior of adolescents in a high school. Gulhane Med J, 2015; 57(2): 129-135.

30. Akyol B, Sogut K, Konar N, Canpolat B. Relation between fat phobia and exercise habits in sedantary visually impaired women. Gaziantep University J Sports Sci, 2018; 3(3): 102-110.

31. Aran OT, Ucgul MS, Ekici G. (2018). The relationship between body image perception and life satisfaction in individuals with lower extremity amputation. J Occupational Therapy and Rehabil, 2018; 6(2): 89-94.

32. Dalbudak I, Balyan M, Zekioglu A, Basoglu UD, Manci E. The Relationship between body perception and nutrition of B2 - B3 Impaired Athletes. Progr Nutr [Internet]. 2021 May 3 [cited 2021 Dec. 19];23(S1):e2021140.

33. Pehlivan Z, Ada EN, Oztas G. Healthy lifestyle behaviours and social appereance anxiety of housewivers. Hacettepe J Sport Sci, 2017; 28 (1): 11–23.

34. Turk N. The effect of bosu exercise to the physical availability and psychosocial changes in sedantary women. Unpublished Master Thesis, Hitit University Institute of Social Sciences, Department of Physical Education and Sports, Çorum, 2016.

35. Yılmaz A, Ulas B. Making goals physical activity of women and challenges faced in recreactional areas. Hacettepe J Sport Sci, 2016; 27 (3): 101-117.

36. Hacısoftaoglu I, Bulgu N. Women and exercise: contradictory meanings of aerobic exercise. Hacettepe J Sport Sci, 2012; 23(4): 177-194.

37. Alanoglu S, Isik O, Ayhan C. The effect of regular recreational activities on adult women's stress, happiness, and life satisfaction levels. Progr Nutr [Internet]. 2020 Sep. 25 [cited 2021 Dec.19];22(2S):e2020030. https://mattioli1885journals.com/index.php/progressinnutrition/article/view/10635.

38. Terlemez M. The effect of sports activity on self-confidence, serotonin and dopamine. INJOSS, 2019; 2(2): 1-6.

39. Zorba, E. Lifelong sport for everyone. Neyir Publishing, Ankara, 2012.

40. Ekinci NE, Kalkavan A, Ustun UD, Gunduz B. Examining the factors that may prevent university students from participating in sportive and non-sportive recreational activities. Sportive Perspective: J Sport and Edu Sci, 2014; 1(1): 1-13.

41. Sun E, Eroglu H. The effect of sports on the self-confidence levels of high school students. J Physical Education and Sport Sci, 2016; 18(4): 29-38.

42. Ozbek S, Tasbilek Yoncalık M, Alıncak F. (2017). Comparison of self-confidence levels of sportsman and sedentary high school students (Kırşehir province sample). Gaziantep University. J Sport Sci, 2017; 2(3): 46-56.

43. Sebire SJ, Standage M, Vanstreenkiste M. Development and validation of the goal content for exercise questionnaire. J Sport Exercise Psy, 2008; 30(4): 353-377.

44. Can Y, Kacar Z. (2016). Investigation of the relationships between athlete identity perception and feelings of courage and self-confidence. JHD J Human Sci, 2016; 13(3): 6176-6184.

45. Isıklar A. Investigation of quality of life and self-esteem levels in adolescents in terms of gender and obesity variables. Fırat University J Social Sci, 2012; 22(2): 84-92.

46. Wiederman MW. Women's body image self-consciousness during physical intimacy with a partner. JSR The J Sex Research, 2000; 37(1): 60–68.

————

Correspondence:
Zekiye Başaran
Kocaeli University, Sport Science Faculty
Umuttepe, Izmit / Turkey
E-mail: zekiye.basaran@kocaeli.edu.tr
ORCID: 0000 0001 7331 9774