

The relationship between subjective well-being levels and physical self-perception and eating attitudes of students receiving sports education

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Summary. The study aims to investigate students' physical selves, eating attitudes and subjective well-beings besides the predictive status of their physical self and eating attitude in subjective well-being. Method: The research which has been designed on the basis of relational research method was conducted with 267 participants from physical education and sports schools. The data of the research consist of participants' demographic information (the department that they study, grade level, gender), Physical Self Inventory scores, Eating Attitude Test scores, and Subjective Well-Being Scale scores. Descriptive analysis, Pearson Correlation and regression tests have been used for data analysis. Results: As a result of the analyzes, it is found that subjective well-being levels of the participants are moderate, 26.6% are at risk of eating attitude disorder, that the physical self, general self, physical condition and sport competence perceptions of physical self-perception sub-dimensions are moderate, and that physical fitness and physical strength perceptions were low. In addition, it is observed that there is a weak negative correlation between subjective well-being and eating attitude behavior, a weak positive correlation between subjective well-being and general self, physical self, physical condition and physical attraction perceptions, a moderate negative correlation between subjective well-being and physical strength perception, no significant relationship between subjective well-being and sport competence perception, and that eating attitude and physical self-perception are significant predictors of subjective well-being and explain 42% of the total variance.

Key words: subjective well-being, eating attitude, physical self

Introduction

It is possible for a person in contemporary social life to lead a happy and systematic life, to express a meaning in society and to play their social roles duly via a healthy individual and personality development. Nutrition, which forms the basis of being a healthy individual, is an individual's consumption of nutrients that provide each of the energy and nutritional elements necessary for the growth, development and healthy and productive life of the individual in sufficient amounts and their usage in the body in the most economical way without losing its nutritional value or making it health-impairing (1). Nutrition is an es-

sential requirement for the development of the body, maintenance of life and protection of health. Adequate and necessary intake of all nutrients required for the growth of the body, regeneration and functioning of the tissues and the proper use in the body are defined as adequate and balanced nutrition (2). Although people have enough nutrition, human health is affected negatively since body's needs cannot be adequately met as a result of consuming the same food group frequently or not receiving the right foods, the necessary energy cannot be provided and the body tissues cannot be structured (3). Overeating leading to obesity, refusal to eat, individual's becoming vegetarian or certain eating restrictions due to the psychological causes, eat-

ing things that cannot be categorized as food, disposal of the food digested immediately after being eaten or irresistible behavior of eating at night arise with the situations referred to as imbalanced nutrition or eating disorder (4). It has been observed that there is no single cause of eating disorders. There are approaches that relate the occurrence of eating disorders to problems in the family, the presence of eating disorders in the family, obesity, adolescent problems, acceptance of sexuality, sexual trauma, socio-cultural norms, biological and genetic factors, and low self-esteem (5, 6).

As mentioned above, low self-esteem is one of the factors effective in the formation of eating disorders. Self-worth in eating disorder depends on appearance, body shape and weight (7). When the symptoms of eating disorder (diet, weight loss, and binge eating, vomiting behavior) are evaluated as an effort to increase self-worth, it is very important to consider individuals' eating attitudes in the context of self. Self is the way individuals perceive their own personality (8). There are many definitions about self in the literature. Self is the whole of one's self-evaluations and beliefs about himself (9). In another definition, self is expressed as an object, the totality of the thoughts and feelings that one imposes on themselves. Beane and Lipka (10) defined the concept of self as individuals' perception of various roles and personal characteristics.

Based on the content of the self-concept, as a result of a large number of researches and a consensus on the multi-faceted and hierarchical structure of the self-concept, defining and evaluating individual's thoughts regarding themselves in different living conditions have started to be dealt with (11). Physical self-perception, which is becoming more and more important and starting to be investigated by the researchers more frequently, is a subset of general self-perception. The concept of physical self, general self-esteem, psychological well-being is regarded as a sub-element of health and life. In addition, physical self-perception is the most important element of multifaceted and hierarchical self-perception that is affected by participation in exercise (12-15). Physical self-concept or physical self-perception is important for healthy development, specialization ability and relationship with our physical environment from childhood and is defined to be individual's self-perception

and evaluation of the psychomotor dimension (13). It is how the individual perceives and evaluates themselves in motor skills (coordination, sports ability, etc.) and physical fitness parameters (strength, endurance, flexibility, etc.) (16).

Self-esteem is important when studying mental wellbeing because of its close association with emotional stability and adjustment, low self-esteem features in many forms of mental illness and low self-esteem is associated with poor health behaviours. Physical self-esteem has been shown through its associations with measures of emotional adjustment, independent of global self-esteem and socially desirable responding, to have mental wellbeing properties in its own right (17). The influence of physical activity on mental well-being. Like self-perception, physical self-perception is an indicator of psychological health and psychological well-being (18). The concept of psychological well-being expresses positive functionality in one's life. Subjective well-being, expressed as happiness in spoken language, is the evaluation of one's own life. This evaluation is both cognitive (judgments about life satisfaction) and emotional (satisfactory and unsatisfactory emotional responses) (19). Subjective well-being, which is defined as experiencing positive emotions more frequently than negative ones and satisfaction from life (20), is the subjective belief or feeling that life is going well (21). Satisfaction obtained from life expressed in the definition constitutes the cognitive dimension of subjective well-being and includes evaluations of the individual about various living areas (marriage, work, health, success, etc.). The frequency of positive and negative emotions is the affective dimension of subjective well-being. Accordingly, emotions such as joy, enthusiasm, confidence, excitement, interest and gaiety are positive affect; fear, anxiety, guilt, anger, hate and sadness are negative affect (20-23).

When the literature is examined, there are not many studies examining the relationship between these three concepts. Such a study is considered to be more useful in determining some of the factors affecting the subjective well-being levels of the students. In this study, it is aimed to investigate the physical self, eating attitude and subjective well-being levels of students and predicting the subjective well-being levels

of students according to their physical self and eating attitude. In accordance with this purpose, responses to sub-problems below are investigated:

1. What is the level of physical self-perception, subjective well-being and eating attitude of students?
2. Do the students' physical perceptions and eating attitude behaviors predict their subjective well-being statistically significant?

Methods

This research has been designed on the basis of the correlational research method defined as the examination of the correlation between two or more variables without any effect on the variables (24). This method has been preferred in this research because the participants were asked to answer the questions without any effect.

Participants

The research group of the study consists of a total of 267 people studying at the School of Physical Education and Sports. Random sampling method was used to identify the participants. Table 1 shows the distribution of participants by department, grade level and gender.

As can be seen in Table 1, 27.7% (74 people) of the participants are female and 72.3% (193 people) are male. 48.8% (125 people) are in the administration de-

partment and 53.2% (147 people) are in the teaching department. 34% (105 people) are 1st grade, 29% (87 people) are 2nd grade, 20% (61 people) are 3rd grade and 17% are 4th grade.

Measures

Four different data have been collected in the study: demographic characteristics (department, class level and gender), physical self-perception, eating attitude habits and subjective well-being levels of the participants. A form was prepared by the researchers to determine the demographic characteristics of the participants.

Physical Self Inventory (PSI)

Data related to the physical self-perception of the participants were collected using the 6-point Likert type Physical Self Inventory (PSI) which was developed by Ninot et al. (2000), adapted to Turkish and whose validity-reliability studies were done by Çağlar et. al. (2017) (25, 26). The physical self-scale consists of 25 items in six sub-dimensions: general self, physical self, physical condition, sport competence, physical strength and physical attraction. In order to determine the reliability of the scale, Cronbach alpha internal consistency coefficients have been calculated in the physical attraction sub-dimension (0.55) = 0.71 in this study; in the general self-concept sub-dimension (0.66) = 0.68 in this study; in the physical condition sub-dimension (0.72) = 0.70; in the physical strength sub-dimension (0.72) = 0.70 in this study; in the physical self-worth sub-dimension (0.80) = 0.71 in this study and in the sports competence sub-dimension (0.89) = 0.69 in this study.

Eating Attitude Test (EAT)

The 6-point Likert-type Eating Attitude Test (EAT), which was developed by Garner and Garfinkel (1979), adapted to Turkish and whose validity-reliability studies were done by Savaşır and Erol (1989), was used to evaluate the disorders in eating behaviors and attitudes of the participants and to measure the symptoms of anorexia nervosa. EAT consists of 40 questions (27, 28). The cut-off point of the scale is 30 points. For items 1, 18, 19, 23, 27, 39 sometimes 1 point, rarely 2 points and never 3 points and other options are evaluated as 0

Table 1. Frequency and Percentage Distribution of Demographic Characteristics of Participants

Gender	n	Percentage %
Female	74	27,7
Male	193	72,3
Total	267	100,0
Department	n	Percentage %
Administration	125	48,8
Teaching	147	53,2
Grade	n	Percentage %
Grade 1	105	34
Grade 2	87	29
Grade 3	61	20
Grade 4	52	17

points. For the other items of the scale, always 3 points, very often 2 points and often 1 point and other options are calculated as 0 points. As a result, the total score of the scale is obtained by adding the scores taken from each item of the scale. In the current study, people who scored ≥ 30 according to the EAT-40 evaluation scale have been described as “susceptible to eating behavior disorder”. The Cronbach’s alpha reliability coefficient for the whole inventory was calculated to be (0.83) by Garner and Garfinkel (1979), (0.70) by Savaşır and Erol (1989), and in this research = 0.87.

Subjective Well-Being Scale

Data related to subjective well-being of the participants were developed by Tuzgöl (2004) based on the theories explaining subjective well-being, mainly Diener’s (1984) views on subjective well-being (20, 29). The 5-point Likert-type Subjective Well-Being Scale consists of 46 items. The scale includes personal judgments about living spaces and positive and negative emotion expressions. The scores of each item ranged from 5 to 1. 26 of the scale items are negative expressions. Negative expressions are items 2, 4, 6, 10, 13, 15, 17, 19, 21, 24, 26, 28, 30, 32, 35, 37, 38, 40, 43 and 45. Scoring negative expressions is done by reversing. The lowest score that can be obtained from the scale is 46 and the highest score is 230. High score indicates a high level of subjective well-being. Cronbach’s alpha reliability coefficient (0.93) of the scale has been found to be = 0.92 in this study.

Ethical Consideration

Ethics committee approval for this study was obtained from Erzincan Binali Yıldırım University

Ethical Committee of Scientific Research (Decision number: 2019.05.05-03). We thank all study participants for their willingness to participate.

Statistical Analysis

Data have been analyzed using SPSS version 22. Frequency and percentage values were used to identify the demographic characteristics of the participants (department, grade level, gender).

In the research, firstly, the appropriateness of the data to the normal distribution has been examined when deciding the analysis of the sub-problems. Since Skewness and Kurtosis values are between +2 and -2, it is accepted that the movement distributions are normal (30). In addition, when the Q-Q plot graphs are examined, it can be assumed that the data are normally distributed because all the sub-dimensions and total values are collected on or near the diagonal.

Arithmetic mean and standard deviation techniques have been used to reveal the physical self-perception, eating attitude habits and subjective well-being of the participants. Pearson Correlation Coefficient has been also calculated to determine the level or amount and direction of the correlation between the variables. A simple regression analysis has been used to find out the answer to the question as to whether physical self-perception and eating attitude are a significant predictor of subjective well-being. The significance level of the tests has been taken as .05.

Results

In this section, the findings obtained from the students are given.

Table 2. Descriptive statistics of variables

	n	Min.	Max.	\bar{x}	Ss	Skewness	Kurtosis
Subjective Well-being	267	99.00	230.00	171.31	26.08	-.109	-.557
Eating Attitude	267	3.00	85.00	22.88	15.57	1.677	1.986
General Self	267	8.00	30.00	19.03	5.96	.608	-.931
Physical Self	267	5.00	30.00	19.79	4.16	-.343	.252
Physical Condition	267	6.00	49.00	16.97	4.30	1.506	1.406
Sport Competence	267	4.00	24.00	13.52	2.67	.531	1.895
Physical Attractiveness	267	6.00	18.00	10.00	3.18	1.017	.273
Physical Strength	267	3.00	18.00	7.87	3.37	.598	-.380

Table 3. Eating attitude test score percentages of participants

EAT-40	EAT<30		EAT≥30	
	n	%	n	%
	204	76,4	63	23,6

As seen in Table 2, subjective well-being levels (=171.31) of the participants have been found to be moderate and eating attitudes (=22.88) are normal eating attitudes according to student perceptions. It has been observed that the physical self (= 19.7general self (= 19.03), physical condition (= 16.97) and sport competence (=13.52) perceptions of physical self-perception sub-dimensions are moderate; physical fitness (=16.97) and physical strength (=7.87) perceptions are low. In addition, as presented in Table 2, when the distribution of the data is examined, it is accepted that the related distributions are normal due to the fact that the sub-dimensions of the inventory and Skewness and Kurtosis values related to the distribution of all data are between +2 and -2 (30). Moreover, when the Q-Q plot graphs are examined, it can be assumed that the data are distributed normally as all the sub-Dimensions and all the values according to total scores are collected on or near the diagonal.

A score of 30 or higher on the Eating Attitude

Test indicates impaired eating behavior. Accordingly, when Table 3 is examined, it is determined that 23.6% of the students have the risk of eating disorder.

As shown in Table 4, it can be observed that there is a weak negative linear correlation between subjective well-being levels and eating attitudes of the participants ($r = -.241, p < 0.01$); there is a weak positive linear correlation between subjective well-being levels and general self ($r = .387, p < 0.01$), physical self ($r = .214, p < 0.01$), physical condition ($r = .242, p < 0.01$), physical attractiveness ($r = .122, p < 0.05$); there was a moderate negative linear correlation between subjective well-being levels ($r = -.600, p < 0.01$) and physical strength, and there is no significant correlation between subjective well-being levels ($r = -.103, p < 0.01$) and perception of sport competence.

In Table 5, when the regression results between eating attitude and physical self-perception as the predictive variables and participants' subjective well-being levels as the predicted variables are examined, it is observed that there is a negative weak correlation between eating attitude and subjective well-being of participants ($r = -.24$). And when other variables are controlled, this correlation is calculated as ($r = -.02$). It is clear that there is a positive moderate ($r =$

Table 4. Results of correlation analysis according to the views of the participants

		1	2	3	4	5	6	7	8
1. Subjective Well-being	r	1	-.241**	.387**	.214**	.242**	-.103	.122*	-.600**
	p		.000	.000	.000	.000	.047	.023	.000
2. Eating Attitude	r		1	.017	.109	.092	.231**	-.006	.449**
	p			.389	.038	.066	.000	.464	.000
3. General Self	r			1	.370**	.454**	.095	.516**	-.320**
	p				.000	.000	.061	.000	.000
4. Physical Self	r				1	.411**	.366**	.242**	-.041
	p					.000	.000	.000	.254
5. Physical Condition	r					1	.159**	.281**	-.135*
	p						.005	.000	.014
6. Sport Competence	r							1	.284**
	p								.309
7. Physical Attractiveness	r								1
	p								
8. Physical Strength	r								
	p								

* $p < 0.01$, ** $p < 0.05$

Table 5: Regression analysis results regarding the predictive status of participants' subjective well-being of eating attitudes and their physical self-perceptions.

Variable	B	Standard Error	β	t	p	Binary r	Partial r
Constant	178.390	8.850		20.157	.000		
Eating Attitude	-.022	.046	-.026	-491	.624	-.241	-.023
General Self	.833	.277	.202	3.189	.002	.387	.150
Physical Self	.806	.353	.129	2.287	.023	.214	.107
Physical Condition	.390	.336	.064	1.162	.246	.242	.055
Sport Competence	-.215	.524	-.022	-.411	.681	-.103	-.019
Physical Attractiveness	-.896	.451	-.109	-1.985	.048	.122	-.093
Physical Strength	-4.024	.454	-.520	-8.855	.000	-.600	-.416

R=.655 R²=.429; F=27.785 p=.000

.38) relationship between the general self and subjective well-being of the participants, but when the other variables are controlled, the relationship between the two variables is ($r = .15$). While the correlation between the physical self and subjective well-being of the participants is positive and low ($r = .21$), it is seen that, when the other variables are controlled, it is again calculated to be positive and low ($r=.10$). When the relationship between physical fitness and subjective well-being scores of the participants is examined, it is observed that the calculated correlation is positive and low ($r = .24$). However, when the other variables are controlled, this relationship has again been found to be low positive ($r = .05$). It is seen that the relationship between sport competence which is another predictor variable and subjective well-being levels of participants is negative and low level ($r = -.10$), but this coefficient changes to become ($r = -.01$) when other variables are controlled. While there is a positive and low ($r = .12$) correlation between the scores of physical attraction and subjective well-being of the participants, it is observed that this value is negative and low ($r = .09$) when other variables are kept under control. There is a negative and high level ($r = -.60$) relationship between physical strength and subjective well-being of the participants, but when the other variables are controlled, the relationship between the two variables turn into a moderate and negative ($r = -.41$) relationship.

The established regression model shows that the general self which is called the participants' eating attitudes and physical self-perception, physical self, physical condition, sport competence, physical attractive-

ness, physical strength, and the subjective well-being of the participants form a moderate and significant relationship ($R = .65$). $R^2 = .42$, $p < .001$). All independent variables included in the model explain 42% of the total variance related to subjective well-being levels of the participants that are dependent variables. This signifies that the 48% change in subjective well-being scores can be explained by different variables not included in the regression model. According to the standardized regression coefficients (β), the order of relative significance of the predictive variables on the subjective well-being levels of the participants is as follows: physical strength, general self, physical self, physical attraction, physical condition, eating attitude and sport competence.

When the results of the t-test regarding the significance of regression coefficients are examined, it is seen that the general self-perception ($t = 3.189$, $p < .005$) and physical self-perception ($t = 2.287$, $p < .005$), which are one of the predictive variables, are important predictors in analyzing the subjective well-being scores of the participants. Accordingly, considering the positive relationship direction, it is possible to claim that the increase in the general self and physical self-perceptions positively affected the increase in the scores of the participants' subjective well-being levels. In addition, according to the t-test results related to the significance of regression coefficients, physical attractiveness ($t = -1.985$, $p < .005$) and physical force perceptions ($t = -8.855$, $p < .005$), which are the predictive variables, are an important predictive in explaining the scores related to subjective well-being of the par-

ticipants. Accordingly, considering the negative aspect of the relationship, it can be said that the increase in physical attraction and physical strength perceptions adversely affect the increase in subjective well-being scores of the participants.

Discussion

In the current research, physical self-perception, eating attitude behaviors and subjective well-being levels of students, the predictive aspects of physical self-perception and eating attitudes regarding their subjective well-being levels have been investigated. The findings of the research have been discussed and supported by the literature.

The subjective well-being levels of the participants have been found to be moderate. In the literature, subjective well-being levels of students are parallel to this study (31-35).

In this study, it was found that the mean eating attitude of the participants are 22.88 and 26.6% are at risk of eating attitude disorder. In the studies conducted, it has been seen that the mean scores of eating attitude of the students are close to the findings of this study (36-40).

The physical self, general self, physical condition and sport competence perceptions of the physical self-perception sub-dimensions have been found to be moderate, while physical condition and physical strength perceptions are low. Crocker et al. (2000) reported that physical condition and sport competence perceptions of the physical self perception sub dimensions have been found to be high in adolescence. Rausort et al. found that (2004) physical self-worth, sport competence, body attractiveness, physical strength and physical condition were moderate (41). In the study conducted by Makar (42), it was found that the levels of physical self-perception of the students participating in the study had normal values. In the study of Pehlivan (43), it was specified that teacher candidates' sports ability, physical strength, flexibility and appearance were high. In their study, Kılıçarslan (44) found that physical education teachers have a high level of physical self-perception. It was seen that the students participating in the study had normal values in terms

of their physical self-perception levels. It can be said that the differences in the sub-dimensions of physical self-perception between other studies and this one are due to the gender variable, the different physical activity levels of individuals, and the individual's self-perception at the psychomotor level (45-49).

In the study, it has been specified that there is a weak negative relationship between subjective well-being and eating attitudes of the participants, a weak positive relationship between subjective well-being levels and general self, physical self, physical condition and physical attraction perceptions, a moderate negative correlation between subjective well-being level and physical strength perception, and it has been found that there is no significant relationship between subjective well-being level and sport competence perception. In addition, it has been found that eating attitude and physical self (general self, physical self, physical condition, sporting competence, physical attraction, physical strength) explain 42% of total variance in which subjective well-being is a significant predictor.

When the literature is researched, it is seen that there are negative and significant relationships between eating attitude behavior and subjective well-being (35, 50-53). The reason for this is that the high level of subjective well-being of university students can lead to the development of healthy emotion-thought and behavior, and accordingly, the incidence of psychopathological symptoms may decrease. From this point of view, the incidence of problems related to eating attitude can decrease with increasing subjective well-being. In addition, the study result can be supported from a different point. There are also studies in the literature that reveal positively significant relationships between eating attitude disorder and depression (54-57).

Edwards et. al. (58) data analysis revealed moderate positive correlations within and between the two scales (physical self perception and well-being), supporting the conceptualisation that physical self-perception is a subsystem of the more general construct of psychological well-being. Significant relationships were found between psychological well-being and self-acceptance, sport competence, conditioning, conditioning importance, and body importance. The results generally indicated the two scales were moderately positively cor-

related. In addition, there are studies in the literature that reveal significant relationships between physical self-perception / self-perception and subjective well-being / psychological well-being (20,59-67).

In the literature, there are very limited studies investigating the relationship between these three concepts (eating attitude, physical self and subjective well-being). Interviews confirmed that those showing abnormal eating behavior in the questionnaires did indeed show greater eating pathology as well as lower self esteem. In their study, Oktan and Palancı (51) find that age, body image and eating attitude are identified as significant precursors of subjective happiness and it is determined that the model explains 17% of total variance with regard to subjective happiness. In the study that Hwang et al. (68) conducted, female students' eating attitudes are negatively associated with parental attachment and self-esteem, but positively with a depressive mood. In their study Button et. al. (69) found that abnormal eating behavior of 15-16 year old girls in the questionnaires did indeed show greater eating pathology as well as lower self esteem and interviews also revealed that those with high levels of eating concern showed greater levels of global self dissatisfaction and higher dissatisfaction with their physical appearance. The results are similar.

Conclusion

In this study, it is revealed that physical self-perceptions and eating attitude habits are effective in individuals having more positive emotions, less negative emotions, and feeling satisfied with their lives. As the subjective well-being of individuals decreased, they are more prone to be at risk of eating behavior disorders, and the better physical condition they feel they have and the higher their body perceptions, the happier they are. It is considered that the physical activity levels and the physical self-perception of the students studying in the sports education department are better than the students studying in another department. In this regard, it is recommended that this study should be conducted for students studying in other departments and for people of middle age and above who have a lower level of physical activity.

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