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Psychological Vulnerability and Physical Activity Participating Motivation as Predictors of Success in High School Students

"Lise Öğrencilerinde Başarının Yordayıcısı Olarak Psikolojik Kırılganlık ve Fiziksel Aktiviteye Katılım Motivasyonu"

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ABSTRACT

Aim: The aim of the study was to examine high school students' motivation to participate in physical activity, psychological vulnerability and perception of success, and to determine the relationships among these variables.
Material and Method: The study group consisted of 802 (430 females, 372 males) students. 'Motivation for Participation in Physical Activity Scale (MPPAS)', 'Psychological Vulnerability Scale (PVS)' and 'Success Perception Inventory-Child Form (SPI-CF)' were used for data collection. Descriptive statistics, t-test, ANOVA, Pearson and Spearman Correlation and multiple linear regression tests were used for data analyses.
Results: Motivation to participate in physical activity and success perceptions were above the middle level, and psychological vulnerability perceptions of participants were at middle level. The scores of MPPAS differed significantly according to gender and frequency of participation in physical activity. The scores of PVS differed significantly according to grade level. And SPI-CF scores differed significantly according to the frequency of participation in physical activity.
Conclusion: As the psychological vulnerability increases, motivation to participate in physical activity decreases in the *environmental reason* sub-dimension and increases in the *uncaused sub-dimension.* As psychological vulnerability increased, success perception decreased, and as success perception increased, motivation to participate in physical activity increased. Motivation to participate in physical activity and psychological vulnerability were significant predictors of success perception. The relative importance of the predictor variables on the success perception; motivation to participate in physical activity and psychological vulnerability.

Keywords: High School Student, Motivation, Physical Activity, Psychological Vulnerability, Success Perception.

ÖZET

Amaç: Araştırmanın amacı, lise öğrencilerinin fiziksel aktiviteye katılım motivasyonları ile psikolojik kırılganlık ve başarı düzeylerini bazı değişkenlere göre incelemek ve aralarındaki ilişkiyi belirlemektir.
Materyal ve Metod: Araştırma grubunu, lisede öğrenim gören 802 (430 kız, 372 erkek) öğrenci oluşturmuştur. Veri toplama aracı olarak "Fiziksel Aktiviteye Katılım Motivasyonu Ölçeği (FAKMÖ)", "Psikolojik Kırılganlık Ölçeği (PKÖ)" ve "Başarı Algısı Envanteri-Çocuk Formu (BAE-ÇF)" kullanılmıştır. Verilerin analizinde, betimsel istatistikler, t-testi, ANOVA, Pearson ve Spearman korelasyon ile çoklu doğrusal regresyon testleri kullanılmıştır.
Bulgular: Lise öğrencilerinin fiziksel aktiviteye katılım motivasyonu ve başarı algıları orta seviyenin üzerinde, psikolojik kırılganlık algıları ise orta seviyededir. Katılımcıların FAKMÖ'den aldıkları puanlar cinsiyet, fiziksel aktiviteye katılım sıklığına göre anlamlı bir şekilde farklılaşmaktadır. Öğrencilerin PKÖ'den aldıkları puanlar sınıfa göre anlamlı bir şekilde farklılaşırken, BAE-ÇF'den aldıkları puanlar ise fiziksel aktiviteye katılım sıklığına göre anlamlı bir şekilde farklılaşmaktadır.
Sonuç: Öğrencilerin psikolojik kırılganlıkları arttıkça fiziksel aktiviteye katılım motivasyonları *çevresel nedenler* alt boyutunda azalırken, *nedensizlik* boyutunda ise artmaktadır. Psikolojik kırılganlık arttıkça başarı algısı azalmakta, başarı algısı arttıkça fiziksel aktiviteye katılım motivasyonu artmaktadır. Fiziksel aktiviteye katılım motivasyonu ve psikolojik kırılganlık, başarı algısının anlamlı yordayıcılarıdır. Yordayıcı değişkenlerin başarı algısı üzerindeki göreli önem sırası; fiziksel aktiviteye katılım motivasyonu ve psikolojik kırılganlık şeklindedir.

Anahtar Kelimeler: Başarı Algısı, Fiziksel Aktivite, Lise Öğrencisi, Motivasyon, Psikolojik Kırılganlık.

INTRODUCTION

Intense working hours, modern transportation, digital games, and exam preparation gradually reduce individuals' participation in physical activity (Demir and Hazar, 2018). On the other hand, it is known that participation in physical activity has an important role in protecting against diseases as well as improving the quality of life (Tekkursun Demir and Cicioglu, 2018). Regular physical activity is essential to maintain a healthy and fit life; such activities not only ensure physical fitness but also enhance mental well-being while reducing stress, depression, and anxiety (Ilhan, 2010). Studies scientifically prove the benefits of physical activity on mental health and psychological well-being and show that it has significant health benefits both physically and psychologically (Kucukibis, 2016). According to WHO, physical activity is a factor that affects the physical and mental health of individuals. In addition, psychological, cognitive and emotional factors that affect participation in activity include psychological health and spiritual well-being, which are prominent in WHO's definition of health (WHO, 2000). Vulnerability related to mental well-being has physical, psychological, and social dimensions. It can be associated with the individual being sensitive and open to all these effects against situations that harm and threaten the individual in many ways (Scanlon and Lee, 2007). Psychological vulnerability is defined as a cognitive pattern reflecting an individual's tendency to seek success and approval from the social environment in order to enhance their sense of self-esteem (Sinclair & Wallston, 1999). Personal, cognitive and environmental factors have a significant impact on individuals' vulnerability levels (Gudjonsson, 2010). The individual's ability to maintain his/her own self-esteem without attributing it to any other reason can reduce the level of psychological vulnerability. In other words, an individual who cares about his/her own thoughts and self will be less vulnerable and will be able to express himself/herself better socially (Eksi, Bikec, & Ummet, 2017). In the literature, psychological vulnerability is seen to be positively associated with negative characteristics such as self-alienation, depression, perceived helplessness, loneliness, negative affect, maladaptive coping (Satici et al., 2013), anxiety and stress (Sherman et al., 2009). On the other hand, authentic life has been found to be negatively correlated with positive characteristics such as emotional and social support, positive affect, and life satisfaction (Satici et al., 2013; Sinclair & Wallston, 1999). It can be thought that physical activity, which has been reported in many studies to have a positive relationship with perceived social support (Ay, 2019) and life satisfaction (Kara et al., 2018), will also have a positive effect on reducing psychological vulnerability. However, the two most striking concepts in the phenomenon of psychological vulnerability are social approval and success (Eksi et al., 2019).

Conceptually, success is explained as "the step-by-step realization of goals that are meaningful to the individual in general, through daily programs" (Keskin and Yapici, 2008). In another definition, success is the ability of people to implement their own plans in line with the goals they set for themselves in the future, which they consider important in their lives, and to achieve them in the most appropriate manner and time frame, or otherwise to create new plans and reach the goal (Secer, 2013). A successful individual has the ability to perceive his/her own abilities. In this case, defined as achievement motivation, the individual desires to achieve perfection. As a result, achievement motivation is the person's effort to achieve success in a certain subject, and in the face of negative situations, insisting and being motivated by the pride that success will bring, and heading towards the goal (Sinan, 2015).

When literature is examined, it has been determined that students with high self-efficacy perception (Canpolat and Kazak Cetinkalp, 2011) and who do sports had higher perceptions of success than their peers (Dereceli, 2019), and their psychological vulnerability levels were lower than other students (Bayri and Ozdemir, 2022). As a result of this information, the importance of future generations having better

physical and mental health as well as growing up to be more successful individuals is one of the most prominent issues of our day. Adolescent individuals are particularly susceptible to both positive and negative events occurring around them due to the developmental characteristics of this period. However, revealing the current situation of these individuals is important in determining how their future will be shaped and preparing them for the best future. When the literature was examined, it was determined that the concepts of physical activity and psychological vulnerability (Kirim, 2020), physical activity and perception of success (Bozkurt, 2014) were examined separately, but no study was found in which the three concepts were studied together. However, considering the holistic interaction between adolescents' physical engagement, psychological resilience, and performance outcomes, examining these three dimensions within a unified framework is essential. From a theoretical perspective, this study goes beyond merely addressing a gap in the literature; it offers an integrated conceptual model that explains how adolescents' physical activity participation motivation interacts simultaneously with their psychological vulnerability and success perception. From a practical standpoint, determining these interrelationships provides empirical data for educators, school counselors, and sports practitioners to design targeted psycho-educational programs and exercise interventions. Such evidence-based strategies can simultaneously reduce psychological vulnerability and foster high success perception among high school students. In this context, the aim of this study is to examine the motivation of high school students to participate in physical activity and their psychological vulnerability and perception of success levels according to some variables and to determine the relationship between them. Within the scope of this objective, the following questions were addressed:

1. What are the levels of physical activity participation motivation, psychological vulnerability, and success perceptions among high school students?
2. Do high school students' physical activity participation motivation, psychological vulnerability, and success perceptions differ significantly according to gender and grade level?
3. Is there a significant relationship between the frequency of participation in physical activity among high school students and their physical activity participation motivation, psychological vulnerability, and success perceptions?
4. Is there a significant relationship between high school students' physical activity participation motivation and psychological vulnerability?
5. Is there a significant relationship between high school students' physical activity participation motivation and success perception?
6. Is there a significant relationship between high school students' psychological vulnerability and success perception?
7. Is high school students' physical activity participation motivation and their psychological vulnerability a significant predictor of their success perception?

MATERIAL AND METHOD

Research Model

This research was designed in the correlational survey model within the framework of the quantitative approach. The aim of these studies is to determine whether there is a joint change between two or more variables (Karasar, 2012). The survey technique was used as the data collection technique in the research (Nachmias and Nachmias, 1996).

Research Group

A total of 802 high school students, 430 females (53.6%) and 372 males (46.4%) who were studying in seven different high schools in the Erzincan province of Türkiye and were selected through convenience sampling method, participated in the study. The convenience sampling method was preferred due to its practical advantages in terms of accessibility, time efficiency, cost-effectiveness, and facilitating voluntary participation across multiple schools during the academic term. The mean age of the students was 16.12±1.22. The number of students in the ninth grade was 260, the number of students in the tenth grade was 212, the number of students in the eleventh grade was 213, and the number of students in the twelfth grade was 117. Of the students constituting the research group, the number of students who were on the school sports team was 260 and the number of students who were not on the school sports team was 542. 393 of the participants stated that they participated in physical activity 1-2 days a week, 230 stated that they participated 3-4 days a week, and 179 stated that they participated 5-7 days a week.

Data Collection Tools

In the research, 'Motivation for Participation in Physical Activity Scale (MPPAS)', 'Psychological Vulnerability Scale (PVS)' and 'Success Perception Inventory-Child Form (SPI-CF)' were used as the data collection tools.

Motivation for Participation in Physical Activity Scale: The Motivation for Participation in Physical Activity Scale (MPPAS), developed by Tekkursun and Cicioglu (2018), consists of 16 items and is scored on a 5-point Likert type (1=Strongly agree, 5=Strongly disagree). The scale consists of three sub-dimensions: individual reasons (items 1, 2, 3, 4, 5, 6), environmental reasons (items 7, 8, 9, 10, 11, and 12) and no reason (items 13, 14, 15, and 16). Items 3, 9, 13, 14, 15 and 16 on the scale are reverse scored. The lowest score that can be obtained from the scale is 16, while the highest score is 80. Getting a high score from the scale indicates that the motivation to participate in physical activity is positive. In the scale development study, it was determined that the Cronbach Alpha values of the scale varied between 0.82 and 0.89. The Cronbach Alpha internal consistency coefficient calculated on the data obtained from the current study was 0.85 for the total scale, 0.81 for the individual reasons sub-dimension, 0.72 for the environmental reasons sub-dimension, and 0.87 for the no-reason sub-dimension.

Psychological Vulnerability Scale: The Psychological Vulnerability Scale (PVS), developed by Sinclair and Wallston (1999) and adapted to Turkish by Akin and Eker (2011), consists of 6 items. The scale is scored on a 5-point Likert type “(1=Does not apply to me at all, 5=Completely applies to me)”. The Cronbach Alpha internal consistency coefficient of the scale was calculated as 0.75. The Cronbach Alpha internal consistency coefficient calculated on the data obtained from the current study is 0.77.

Success Perception Inventory-Child Form: The Success Perception Inventory-Child Form (SPI-CF), developed by Roberts, Treasure and Balague (1998) and adapted to Turkish by Kazak Cetinkalp (2009), consists of 12 items and is scored on a 5-point Likert type "(1=Strongly disagree, 5=Strongly agree)". The inventory consists of 2 subscales: task orientation (4, 5, 7, 8, 9, 12) and ego orientation (1, 2, 3, 6, 10, 11). Cronbach Alpha values of the inventory were calculated as 0.87 for the task orientation sub-dimension and 0.84 for the ego orientation sub-dimension. The Cronbach Alpha internal consistency coefficient calculated within the scope of this research was 0.96 for the total scale, 0.94 for the task orientation sub-dimension and 0.93 for the ego orientation sub-dimension.

Data Collection

Permission was obtained from Erzincan Binali Yıldırım University Human Research Educational Sciences Ethics Committee (decision dated 28 February 2022 and numbered E-88012460-050.01.04-155469) and Erzincan Governorship Provincial Directorate of National Education (decision dated 07.04.2022 and numbered 47403306) for the application of the data collection tools used in the study. It was specifically stated that participation in the study was based on confidentiality and voluntariness, and detailed explanations were made before the application, and students who did not want to participate were excluded from the study. It took approximately 15 minutes for the students to fill out the scales.

Statistical Analysis

Whether the data met the prerequisites of parametric tests was decided by examining the Skewness and Kurtosis values, normal distribution curve and Levene test results. In addition, for multiple linear regression analysis, it was examined whether there were extreme values affecting the normality (multivariate) and linearity assumptions according to Mahalanobis distance and Cook's (Cook'<1) values, and for the condition of not having a high correlation coefficient between predictor variables, the pairwise correlation coefficients, VIF, CI values and tolerance value between predictor variables were examined (Buyukozturk, 2012). In the analysis of data, descriptive statistics (frequency, arithmetic mean, standard deviation); t-test, one-way analysis of variance (ANOVA), Pearson and Spearman correlation and multiple linear regression analyses were used as statistical methods. Enter method was used in multiple linear regression analysis. Cronbach's Alpha internal consistency coefficients were calculated to determine the reliability of the scales. In addition, the significance level in the analysis of the data was accepted as $p<0.05$.

RESULTS

This section includes information on the distribution of scores obtained from data collection tools by high school students participating in the study and statistical test results.

Table 1. *Distribution of Scale Scores*

	Item Number	x̄	Sd	Skewness	Kurtosis	Minimum	Maximum
MPPAS	16	3.72	0.70	-0.36	-0.12	1.19	5.00
Individual Causes	6	3.92	0.78	-0.72	0.26	1.00	5.00
Environmental Causes	6	3.28	0.89	-0.04	-0.65	1.00	5.00
Causelessness	4	4.08	1.06	-1.12	0.43	1.00	5.00
PVS	6	3.26	0.97	-0.36	-0.51	1.00	5.00
SPI-CF	12	4.18	0.84	-1.72	3.47	1.00	5.00
Task Orientation	6	4.29	0.85	-1.93	4.20	1.00	5.00
Ego Orientation	6	4.07	0.93	-1.34	1.75	1.00	5.00

Table 1 shows the distribution of the scores that high school students got from the scales. The mean of the scores that the participants got from the 'Motivation for Participation in Physical Activity Scale (MPPAS) is 3.72 and its standard deviation is 0.70. The mean of the scores that the participants got from the Psychological Vulnerability Scale (PVS) is 3.26 and its standard deviation is 0.97. On the other hand, the arithmetic mean of the scores that the high school students got from the Success Perception Inventory-Child Form (SPI-CF) is 4.18 and its standard deviation is 0.84. The skewness [±3.0] and kurtosis [±10] values calculated for the overall scales and their sub-dimensions falling within the range

of indicate that the data exhibit a normal distribution (Kline, 2005). An examination of the skewness and kurtosis values for the scores obtained from the scales and sub-dimensions reveals that the data meet the assumption of normal distribution.

Table 2. *t-Test Results of Scale Scores According to Gender*

	Female ***(n=430)***		**Male** ***(n=372)***		**t**	**p**
	x̄	**Sd**	**x̄**	**Sd**		
MPPAS	3.65	0.71	3.81	0.68	3.31	0.00
Individual Causes	3.85	0.80	4.00	0.76	2.74	0.01
Environmental Causes	3.21	0.90	3.37	0.88	2.53	0.01
Causelessness	3.99	1.08	4.18	1.03	2.46	0.01
PVS	3.20	0.97	3.33	0.96	1.91	0.06
SPI-CF	4.20	0.84	4.16	0.83	0.60	0.55
Task Orientation	4.30	0.86	4.28	0.84	0.36	0.72
Ego Orientation	4.09	0.92	4.04	0.94	0.76	0.45

**p<0.01, *p<0.05

Table 2 presents the t-test results of scores on the scales according to the gender variable. The analyses show that the scores of the high school students on the MPPAS (t=3.31, p<0.01) and the individual causes (t=2.74, p<0.05), environmental causes (t=2.53, p<0.05) and causelessness (t=2.46, p<0.05) sub-dimensions differ significantly. According to this finding, the perception of motivation to participate in physical activity of male students is higher than that of female students. On the other hand, it was determined that the scores of the students on the PVS did not differ significantly according to the gender (t=1.91, p>0.05). Similarly, it was found that the scores of the participants from the sub-dimensions of SPI-CF (t=0.60, p>0.05) and task orientation (t=0.36, p>0.05) and ego orientation did not differ significantly (t=0.76, p>0.05).

Table 3. *ANOVA Results of Scale Scores According to Grade Level*

	9th Grade ***(n=260)***		**10 th Grade** ***(n=212)***		**11th Grade** ***(n=213)***		**12th Grade** ***(n=117)***		**F**	**p**	**Significant Difference**
	x̄	**Sd**	**x̄**	**Sd**	**x̄**	**Sd**	**x̄**	**Sd**			
MPPAS	3.76	0.67	3.68	0.72	3.69	0.73	3.75	0.67	0.68	0.57	
Individual Causes	3.92	0.75	3.88	0.80	3.89	0.84	4.05	0.73	1.43	0.23	
Environmental Causes	3.37	0.85	3.26	0.91	3.25	0.93	3.19	0.88	1.41	0.24	
Causelessness	4.11	1.06	4.02	1.06	4.07	1.06	4.14	1.07	0.40	0.75	9<11
PVS	3.15	0.91	3.20	1.05	3.38	0.98	3.39	0.91	3.09	0.03	9<12
SPI-CF	4.24	0.71	4.21	0.86	4.12	0.97	4.09	0.80	1.29	0.28	
Task Orientation	4.34	0.71	4.31	0.85	4.20	0.99	4.29	0.83	1.20	0.31	
Ego Orientation	4.13	0.82	4.11	0.95	4.04	1.02	3.89	0.91	2.10	0.10	

Table 3 presents the ANOVA results of the participants' scores on the scales according to their grade level. The ANOVA test results show that the scores of the high school students on the MPPAS [F(3,798)=0.68, p>0.05] and individual reasons [F(3,798)=1.43, p>0.05], environmental reasons [F(3,798)=1.41, p>0.05] and causelessness [F(3,798)=0.40, p>0.05] sub-dimensions do not differ significantly according to the grade variable. It was determined that the scores the participants received from PVS differed significantly according to the class variable [F(3,798)=3.09, p<0.05]. According to this finding, the scores that the participants received from the scale differ significantly between the ninth grade students and the eleventh grade students in favor of the eleventh grade students; and between the ninth grade students and the twelfth grade students in favor of the twelfth grade students. Specifically, these findings indicate that twelfth-grade students exhibit higher psychological vulnerability, suggesting

a positive correlation between grade level and psychological vulnerability. On the other hand, it was determined that the scores of the participants from the SPI-CF [F(3,798)=1.29, p>0.05] and task orientation [F(3,798)=1.20, p>0.05] and ego orientation [F(3,798)=2.10, p>0.05] sub-dimensions did not differ significantly according to the grade variable.

Table 4. *Correlation Results Between Frequency of Participation in Physical Activity and Scores Obtained from Scales*

	FPAP		
	n	**r**	**p**
MPPAS	802	0.23**	0.00
Individual Causes	802	0.21**	0.00
Environmental Causes	802	0.09*	0.02
Causelessness	802	0.27**	0.00
PVS	802	0.02	0.64
SPI-CF	802	0.08*	0.03
Task Orientation	802	0.10*	0.01
Ego Orientation	802	0.06	0.07

**p<0.01, *p<0.05

Table 4 presents the correlation results between the frequency of physical activity participation (FPAP) of high school students and the scores they received from the scales and their sub-dimensions. The correlation results show that there are positive and low-level significant relationships between the frequency of physical activity participation of high school students and the scores they received from the sub-dimensions of MPPAS (r=0.23, p<0.01), individual reasons (r=0.21, p<0.01), environmental reasons (r=0.09, p<0.05) and causelessness (r=0.27, p<0.01). Accordingly, as the frequency of high school students' participation in physical activity increases, their motivation to participate in physical activity also increases. On the other hand, no significant relationship was found between the frequency of participants' physical activity participation and their scores on the PVS (r=0.02, p>0.05). While a significant relationship was found between the scores of high school students from the SPI-CF (r=0.08, p<0.05) and task orientation (r=0.10, p<0.05) sub-dimensions and the frequency of their participation in physical activity, no significant relationship was found between the scores they received from the ego orientation (r=0.06, p>0.05) sub-dimension. Accordingly, higher frequencies of physical activity participation among high school students are associated with elevated levels of success perception and task orientation.

Table 5. *Correlation Results Between PVS and MPPAS and Its Sub-Dimensions*

	Psychological Vulnerability		
	n	**r**	**p**
MPPAS	802	0.03	0.35
Individual Causes	802	0.04	0.24
Environmental Causes	802	-0.11**	0.00
Causelessness	802	0.18**	0.00
SPI-CF	802	-0.12	0.00**
Task Orientation	802	-0.08	0.03*
Ego Orientation	802	-0.14	0.00**

**p<0.01, *p<0.05

Table 5 presents the correlation results between the scores obtained from the PVS, MPPAS, SPI-CF and their sub-dimensions by the participants in the study. The results show that there is no significant relationship between psychological vulnerability and the scores obtained from the MPPAS (r=0.03, p>0.05) and individual reasons (r=0.04, p>0.05) sub-dimensions; there are negative and low-level

significant relationships between the scores obtained from the environmental reasons (r=-0.11, p<0.01) sub-dimension; and there are positive and low-level significant relationships between the scores obtained from the causelessness (r=0.18, p<0.01) sub-dimension. According to this finding, as the psychological vulnerabilities of the participants increase, their motivation to participate in physical activity decreases in the environmental reasons sub-dimension and increases in the causelessness sub-dimension. And the correlation results between the scores of the participants in the study from the PVS and SPI-CF show that there are negative and low-level significant relationships between the scores of the psychological vulnerability and the SPI-CF (r=-0.12, p<0.01), task orientation (r=-0.08, p<0.05) and ego orientation (r=-0.14, p<0.01) sub-dimensions. According to this finding, as the psychological vulnerability of the participants increases, their perception of success decreases.

Tablo 6. *Correlation Results Between SPI-CF and MPPAS and Its Sub-Dimensions*

		SPI-CF	
	n	**r**	**p**
MPPAS	802	0.37**	0.00
Individual Causes	802	0.37**	0.00
Environmental Causes	802	0.31**	0.00
Causelessness	802	0.19**	0.00

**p<0.01

Table 6 presents the correlation results between the scores of the participants in the study from SPI-CF and MPPAS and its sub-dimensions. The results show that there are positive, low and medium-level significant relationships between the scores of the perception of success and MPPAS (r=0.37, p<0.01) and the scores of the sub-dimensions of individual reasons (r=0.37, p<0.01), environmental reasons (r=0.31, p<0.01) and causelessness (r=0.19, p<0.01). According to this finding, as the participants' perception of success increases, their motivation to participate in physical activity increases.

Table 7. *Multiple Linear Regression Results Between Motivation to Participate in Physical Activity and Psychological Vulnerability and Perception of Success*

	B	**Std. Error**	**β**	**t**	**p**
Constant	2.85	0.17	-	16.59	0.00
MPPA	0.45	0.04	0.38	11.60	0.00
PV	-0.11	0.03	-0.13	-3.91	0.00

$R=0.39$; $R^2=0.16$; $F_{(2,799)}=73.46$; $p=0.000$

Table 7 presents the results of multiple linear regression analysis conducted to determine whether the scores related to motivation to participate in physical activity and perception of psychological vulnerability are significant predictors of perception of success. The results of the one-way ANOVA test show that the established regression model is generally significant (F(2,799)=73.46, p=0.000). As a result of regression analysis, it was determined that motivation to participate in physical activity (β=0.38) was a positive predictor of the perception of success, while perception of psychological vulnerability (β=-0.13) was a negative predictor (R=0.39, R2=0.16). It was determined that the motivation to participate in physical activity and the perception of psychological vulnerability together explained 16% of the perception of success. According to the standardized regression coefficient, the relative importance order of the predictor variables on the perception of success is; motivation to participate in physical activity and psychological vulnerability.

DISCUSSION AND CONCLUSION

The data obtained from this study, which was conducted to examine high school students' motivation to participate in physical activity and their perceptions of psychological vulnerability and success according to some variables and to determine the relationship between them, are discussed and interpreted in this section.

According to the results, the motivation of high school students to participate in physical activity is relatively above the medium level. When the literature is examined, it is seen that similar results have been reached in some studies (Guler, 2021). Ciris and Baskonus (2020) found the motivation of physical education teacher candidates to participate in physical activity to be at a medium level in their study. On the other hand, unlike the current situation, there are also studies in the literature where the motivation of high school students to participate in physical activity is at a low level (Cakir, 2019). And, it was determined that the participants' perception of success was again above the medium level. When the literature is examined, the results obtained support the current study (Guven, 2023). In addition, Karahan (2021) stated in the studies that the average ego orientation of the participants was higher than the average task orientation. On the other hand, another result obtained from the study shows that the participants' perception of psychological vulnerability was at a medium level. In some studies in the literature, similar to the research results, it was stated that the psychological vulnerability perceptions of the participant group were at a moderate level (Kirim, 2020). In the study conducted by Bayraktar (2019), it was determined that the participants' psychological vulnerability perceptions were above the moderate level.

The research results show that male high school students have higher motivation to participate in physical activity than female students. This may be explained by differences in physical and social development between genders during adolescence. When the literature was examined, although there were studies supporting our study results (Akkose, 2020; Coskun, 2019; Guler, 2021), there were also studies that did not support our study results (Çakır, 2019; Tekkurşun Demir and Cicioğlu, 2019). Similarly, Bozdag and Ozbek (2020) stated in their study that there is a significant relationship in the dimension of causality in favor of women in physical activity participation in high school students. It is thought that the different results seen in the studies are due to the diversity of age groups. As a result of the research, the psychological vulnerability perceptions of girls and boys do not change. In the research conducted by Garashli (2020) it was determined that the gender factor did not have any effect on psychological vulnerability and interpreted this as receiving sports training. In parallel with our study finding, Bayraktar (2019) determined that the psychological vulnerability levels of the participants did not differ significantly in terms of the gender variable. On the other hand, when the literature is examined, there are studies indicating that women have higher psychological vulnerability (Romero-Moreno et al., 2014). In light of the literature, the unchanged perceptions of psychological vulnerability among students can be attributed to their exposure to similar socio-educational processes. Another result obtained from the research is that the perceptions of success of female and male students do not change. When the literature is examined, similar findings to the current study results have been revealed in the studies conducted (Canpolat and Kazak Cetinkalp, 2011; Elmas, 2018). The lack of significant differences in success perceptions may be attributed to the homogeneous demographic characteristics of the students.

The results obtained from the research show that as the grade levels of high school students increase, their perception of psychological vulnerability increases. Garashli (2020) concluded that

psychological vulnerability scores did not differ significantly according to the grade variable in his study with university students. As the grade level of the participants increases, the fact that they get closer to the university exam and start thinking more about the future may have an effect on this result. On the other hand, the results of the research show that the perceptions of high school students' motivation to participate in physical activity do not change according to the grade they study. Although physical education and sports courses include physical, mental and psychological development gains for students, they are mostly seen as an entertainment and relaxation process for students. These results suggest that students' consistent evaluation of the course throughout high school does not induce substantial variations in their motivation perceptions. There are studies in the literature that support the research results (Guler, 2021; Kucuk Kilic, 2020). On the other hand, in the study conducted by Cakir (2019), it is seen that significant relationships were found between the motivation to participate in physical activity and the grade level variable. In addition, Tekkursun Demir and Cicioglu (2019) stated in their study with high school students that lower classes who did not experience exam fear had higher motivation to participate in physical activity. Again, when the research results were examined, the success perceptions of high school students did not change according to the grade they were studying in. When the studies in the literature were examined, it was seen that although the age factor increased along with the grade factor, similar results were obtained with the current study (Canpolat and Kazak Cetinkalp, 2011). Karahan (2021) found a significant difference in the ego sub-dimension of success perception according to the grade variable in his study. In contrast to our findings, existing literature suggests that the grade level variable significantly influences ego orientation.

The research results show that as the frequency of high school students' participation in physical activity increases, their motivation to participate in physical activity also increases. The benefits that physical activity provides to individuals also provide the necessary motivation for individuals to repeat this activity more frequently. Consequently, it is evident that a higher frequency of physical activity engagement concomitantly enhances individuals' motivation to participate in such activities. Similarly, Reigal et al. (2014) found in their research that physically active students have higher attitude levels. On the other hand, Bozdag and Ozbek (2020) concluded in their research on high school students that sedentary students have higher participation in physical activities in the environmental reasons sub-dimension. According to another result obtained from the research, as the frequency of participants' participation in physical activity increases, their perception of success increases. Consequently, the psychological and mental development fostered by physical activity concurrently elevates students' perceptions of success. There are studies in the literature that support our research result from studies conducted with similar sample groups (Bozkurt, 2014; Karahan, 2021). On the other hand, in the study conducted by Sinan (2015) on students aged 14-18, it was concluded that there was no significant difference in the level of perception of success according to the variable of duration of sports. Another result of the study shows that there is no relationship between the frequency of participants' participation in physical activity and their perception of psychological vulnerability. Although there is no statistically significant relationship, it has been stated in the literature that physical activity and participation in sports reduce fear, increase self-confidence, and have a positive effect on the individual against psychological factors such as depression, stress, and vulnerability (Ikizler, 2006).

According to the results of the study, as the psychological vulnerabilities of high school students increase, their motivation to participate in physical activity decreases in the “environmental reasons” sub-dimension and increases in the “causelessness” sub-dimension. According to this finding, adolescent participants tend to engage in physical activities primarily as a relaxation mechanism to counter their psychological vulnerability; alternatively, environmental factors may exert a detrimental

influence on this dynamic. The research results show that as the participants' perception of success increases, their motivation to participate in physical activity increases. When the literature is examined, it is seen that the participants' perception of success is at a good level in studies conducted with students participating in school sports and elite athletes (Bozkurt, 2014). The findings of the present study demonstrate that physical activity participation exerts a fundamentally positive impact on the overall perception of success. On the other hand, the study results show that as the participants' psychological vulnerabilities increase, their perception of success decreases. In the literature, it is seen that individuals who feel psychologically well also have a high perception of success (Gil-Monte et al., 2011; Karacam and Pulur, 2019). Aligned with supporting literature, these findings underscore that lower levels of psychological vulnerability significantly foster individuals' perceptions of success.

Finally, as a result of the research, motivation to participate in physical activity and psychological vulnerability are significant predictors of the perception of success, and together they explain 16% of the perception of success. The relative order of importance of the predictor variables on the perception of success is motivation to participate in physical activity and psychological vulnerability.

Participants demonstrated above-moderate levels of motivation for physical activity participation and perception of success and a perception of psychological vulnerability at a moderate level. While the motivation to participate in physical activity of male high school students was higher than that of female students, the psychological vulnerability and perception of success of female and male students did not change. As the grade level of high school students increased, their perception of psychological vulnerability increased, while the motivation to participate in physical activity and the perception of success did not change according to the grade they were in. While the frequency of participation in physical activity of high school students increased, their motivation to participate in physical activity and their perception of success increased, there was no relationship between the frequency of participation in physical activity and psychological vulnerability. As the psychological vulnerability of high school students increased, their motivation to participate in physical activity decreased in the environmental reasons sub-dimension and increased in the causelessness sub-dimension. As the perception of success of high school students increased, their motivation to participate in physical activity increased, and as their psychological vulnerability increased, their perception of success decreased. Motivation to participate in physical activity (positive) and psychological vulnerability (negative) are significant predictors of perceived success, together explaining 16% of perceived success. The relative order of importance of predictor variables on perceived success is motivation to participate in physical activity and psychological vulnerability.

As a result of the research, it is seen that the frequency of physical activity participation has a positive effect on the increase in the motivation of high school students to participate in physical activity and their perception of success. In order to raise healthier and more successful individuals, a physical activity program can be prepared for high school students outside of physical education and sports lessons. In-service training programs or development seminars can be organized for teachers to make them spend physical education and sports lessons in the most efficient way. In addition the selection of the research group through convenience sampling and its restriction to students studying solely in the Erzincan province limit the generalizability and representativeness of the findings. Furthermore, conducting the study based on a correlational survey model precludes the establishment of definitive causal relationships among the variables examined. In this context, future research could expand the sample size to include students from diverse provinces. Additionally, mixed-methods studies

incorporating experimental or qualitative approaches could be utilized to better elucidate causal relationships.

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