

Examining the Mediation of Sport Engagement and Self-Confidence in the Effect of Self-Regulation on Burnout in Athletes: A Structural Equation Modeling Study

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Abstract

The aim of this study was to examine the mediation of self-esteem and sport engagement in the effect of self-regulation on burnout in athletes and to compare these variables according to some socio-demographic factors. The participants of the study, which was conducted with a correlational cross-sectional survey design, were 303 athletes of the Faculty of Sports Science. The Sportive Self-Regulation Scale (SSRS) was used to measure self-regulation, the Sport Engagement Scale (SES) to measure sport engagement, the Trait Sport-Confidence Inventory (TSCI) to measure sport confidence, and the Athlete Burnout Questionnaire (ABQ) to measure burnout. Results indicate that there are significant relationships between SSRS, SES, TSCI, and ABQ in student athletes. While sport age was positively associated with SSRS and SES, chronological age was not associated with any variable. When measures were compared by gender and type of sport, females and single sport participants had lower TSCI means. The 4th grade athletes had low SES and TSCI averages and high ABQ averages. Mediation results reveal that SSRS predicts SES and TSCI, SES does not have a mediating role because it does not predict ABQ, TSCI predicts ABQ and SSRS is a full mediator in its effect on ABQ.

Keywords: Athletes, Self-regulation, Burnout, Sport attachment, Self-confidence

Sporcularda Öz Düzenlemenin Tükenmişliğe Etkisinde Spora Bağlanma ve Öz Güvenin Aracılığının İncelenmesi: Bir Yapısal Eşitlik Modeli Çalışması

Öz

Bu çalışmanın amacı, sporcularda öz düzenlemenin tükenmişlik üzerindeki etkisinde öz güvenin ve spora bağlanmanın aracılığını incelemek ve bu değişkenleri bazı sosyo-demografik faktörlere göre karşılaştırmaktır. Korelasyonel kesitsel tarama deseniyle yürütülen çalışmanın katılımcıları spor bilimleri fakültesinde öğrenim gören 303 sporcudur (111 kadın, 192 erkek, Ort. Yaş = 21.59 ±2.25, aralık: 18-34). Öz düzenlemeyi ölçmede Sportif Öz Düzenleme Ölçeği (SÖDÖ), spora bağlanmayı ölçmede Spora Bağlılık Ölçeği (SBÖ), öz güveni ölçmede Sportif Güven Ölçeği (SGÖ), tükenmişliği ölçmede Sporcu Tükenmişlik Ölçeği (STÖ) kullanılmıştır. Sonuçlar, sporcu öğrencilerin SÖDÖ, SBÖ, SGÖ ve STÖ puanları arasında anlamlı ilişkiler olduğunu göstermektedir. Spor yaşı SÖDÖ ve SBÖ ile pozitif ilişkiliyken kronolojik yaş hiçbir değişkenle ilişkili değildir. Ölçümler cinsiyete ve spor türüne göre karşılaştırıldığında, kadınların ve bireysel spora dahil olanların SGÖ ortalamaları düşüktür. SÖDÖ ortalamaları sınıf seviyesine göre farklılaşmazken 4. sınıf öğrencilerinin SBÖ ve SGÖ ortalamaları 2. sınıf öğrencilerinden düşük, STÖ ortalamaları ise diğer üç sınıf seviyesinden yüksektir. Aracılık sonuçları SÖDÖ'nün SBÖ ve SGÖ'yü yordadığını, SBÖ'nün STÖ'yü yordamaması nedeniyle aracılık rolüne sahip olmadığını, SGÖ'nün STÖ'yü yordadığını ve SÖDÖ'nün STÖ'ye etkisinde tam aracı olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Sporcular, Öz düzenleme, Tükenmişlik, Spora bağlanma, Öz güven

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INTRODUCTION

Burnout has been defined as a problem that individuals face in their working lives, tiredness, fatigue, failure, and exhaustion of the individual's energy in the face of excessive demands (Zivnуска et al., 2019). At the same time, this concept has been dimensioned as emotional exhaustion, which includes physical fatigue, depersonalization, which includes indifference and apathy toward the work performed and the individuals served, and low sense of personal accomplishment, in which the individual evaluates himself as a failure as a result of his negative feelings toward his work (McCade et al., 2021; Turnbull & Rhodes, 2019). Burnout, which has begun to be studied scientifically, is a problem observed both in the academic field and among students undergoing training in various fields (health, security, teaching, etc.). In fact, athletes are also included in the academic field. Students studying in the field of sports have to meet the requirements of this discipline as well as the academic requirements. The effort to be successful in these two fields can lead to burnout among students (Sorkkila et al., 2018). At the same time, the pressure and competition created by the obligation to be successful in one's sports discipline makes students studying in this discipline more susceptible to both school and sports burnout (Aunola et al., 2018).

Recently, the concept of burnout has also been studied in sports and athletes. Athletes exert effort before and during their performance, which can lead to physical and mental fatigue (Nedelec et al., 2012). If athletes cannot balance the demands of their sport with adequate rest and recovery, negative consequences such as burnout (Gustafsson et al., 2008), decreased performance (Halsen & Jeukendrup, 2004), and even injury (Andersen & Williams, 1988) are inevitable. This situation also leads to stress, depressive moods and consequences such as quitting the sport in athletes with high burnout (Lemyre et al., 2007; Lin et al., 2021). On the contrary, positive variables such as stress coping skills, hope, perceived control and optimism were observed at higher levels in athletes with less burnout (Gustafsson, et al., 2008; Gustafsson & Skoog, 2012; Raedeke & Smith, 2004). However, elite athletes in particular are expected to dedicate themselves to their sport and to be successful in that sport. These expectations lead to some risks such as burnout, depression and eating disorders (Gustafsson et al., 2018).

Athlete burnout is a state of extreme physical, emotional, and mental stress in an intense training and competitive environment. This can lead to negative effects such as loss of motivation, poor performance and a decrease in overall quality of life (Gustafsson et al., 2008). Many methods are used by athletes to prevent burnout. One such method is self-regulation. (Balk & Englert, 2020). Zimmerman (2000) defined self-regulation as thoughts, feelings, and actions that are planned and cyclically adapted to achieve personal goals. If we stick to Zimmerman's definition and express the skill a little more clearly, self-regulation is basically making various plans to achieve the goal that the person has set, performing a series of controlled/conscious behaviors in this direction, making various inferences by evaluating himself after his behaviors, and starting the cycle again by revising his goal or behaviors according to the difference between the set goal and the achieved gain. Sport self-regulation is the ability of athletes to manage their emotional and mental states; it includes elements such as goal setting, time management, and stress management. Effective self-regulation can help

athletes reduce feelings of burnout, improve performance, and enable them to regain dominance, take control, and turn the game in their favor. Therefore, it is of great importance for athletes to improve their self-regulation skills in order to maintain both physical and mental health (Backović et al., 2012; Durand-Bush & Salmela, 2002; Jordalen et al., 2016). This is because sport self-regulation is an effective skill in reducing athlete burnout (McNeill et al., 2019). Because research on groups of athletes shows that self-regulated learning skills are necessary for long-term development and competence, such as ensuring progression to the highest level in the later stages of the career (Jonker et al., 2010; Jonker et al., 2012; Toering et al., 2009).

This is because components of self-regulation such as planning, monitoring, and striving in athletes have also been found to be predictors of elite level competence, such as being a national team player, regardless of branch (Bartulovic et al., 2017). An intervention study investigating the effect of sport self-regulation on stress, burnout, and self-regulatory capacity concluded that self-regulatory skills reduce burnout (Dubuc-Charbonneau & Durand-Bush, 2015). At the same time, this skill has a significant relationship with sport attachment and sport self-confidence (Lazarus, 1966). Sport attachment refers to the level of commitment and passion that athletes have for sport activities (Schaufeli et al., 2002). High levels of sport self-regulation can help athletes solve the problems they experience by strengthening their sport attachment skills (Bekaroglu & Bozo, 2017; Uğur, 2018). In this context, sport attachment behaviors can be supported by self-regulation to reduce the feeling of burnout (Öner & Aşçı, 2020). Sport self-confidence is the belief that athletes have in their own abilities and plays a critical role in their performance (Kuloor & Kumar, 2020). It is suggested that sport confidence affects risk-taking, creativity, and coping skills with performance decline (Vealey et al., 1998). To eliminate such situations, athletes need to engage in self-regulatory behaviors. (Jordalen et al., 2019). Therefore, increasing goal-oriented behavior with self-regulatory skills reduces error rates (Cleary & Zimmerman, 2001; Madjlesi et al., 2017). Thus, there is an increase in self-confidence in the face of difficulties in sport activities and thus a decrease in burnout (Pilgrim et al., 2018).

Therefore, self-regulation skills are effective in reducing burnout in athletes. The literature review suggests that this effect may be mediated by sport engagement and self-confidence. Based on structural equation modeling (SEM), the current study aims to both extend the effect of self-regulation on burnout through sport engagement and self-confidence in athletes, and to extend the factors effective on burnout backwards. The ultimate aim of the current study is to provide evidence for future studies to reduce the risk of burnout in athletes by testing the model in question.

Based on the literature review mentioned above, the hypotheses of the current study were formulated as follows:

H1: Self-regulation in athletes is negatively related to burnout and is effective in reducing it.

H2: Self-regulation in athletes is positively related to sport engagement and self-confidence and is effective in increasing them.

H3: Sport engagement and self-confidence in athletes are negatively related to burnout and are effective in reducing it.

H4: Sport engagement and self-confidence mediate the effect of sport self-regulation on burnout.

METHOD

Research Model

This study was designed using the cross-sectional correlational survey model, which is a type of quantitative research design. A cross-sectional design involves collecting data from participants at a single point in time to examine the current status of variables without any intervention, thereby allowing researchers to describe relationships as they exist naturally (Creswell, 2017). A correlational survey model is used to determine the direction and strength of relationships among two or more variables based on observed data (Karasar, 2014). In this context, the current study collected athletes' self-regulation skills, sport attachment, sport confidence, and burnout scores during the same period (Özdemir, 2016), and conducted correlation, regression, and mediation analyses to test the hypotheses and examine the direct and indirect relationships between the variables.

Universe-Sample

The population of the study was Bayburt University, Faculty of Sport Sciences, and the sample was 303 athletes (163 individual athlete, 140 team athlete, 111 females, 192 males, mean age = 21.59 ± 2.25 , range = 18-34) enrolled and continuing their education in the Physical Education, Coaching, Recreation, and Sport Management programs of the faculty. Soper's (2024) online calculation tool was used to determine sample size (expected effect size: .03, desired statistical power level: .95, number of latent-observed variables: 4-59, probability level: .01). The minimum number of participants to be included for SEM was calculated to be 258. A two-stage sampling procedure was used to reach the study group. In the first step, stratified sampling was used to divide the number of athletes enrolled in each program by the total enrollment of the faculty to determine the proportion of participants from each program. In the second step, convenience sampling was used to reach the athletes, provided that the ratio was maintained.

Ethical Approval

This study received ethical approval from the Ethics Committee of Bayburt University (Approval Code: 201087; Decision No: 115; Date: April 20, 2024).

Data Collection Tools

Information form: The form included questions about the participants' gender, chronological age, sport age, grade level, the program in which they were enrolled, and the type of sport (individual-team) in which they participated. Participants were also asked whether they had

previously or currently been diagnosed with a mental health and/or chronic medical condition, whether they were currently receiving medication for these conditions, and whether they had a limb loss.

Sportive Self-Regulation Scale (SSRS): This is an 18-item scale developed by Akeren and Çingöz (2023) to measure the self-regulation skills of athletes in their sportive activities, with three factors (planning, implementation, and evaluation) and 6 statements in each factor (e.g., I maintain my composure in adverse situations that I encounter during competition). The questions are answered on a 5-point Likert scale ranging from "Not at all suitable for me" to "Completely suitable for me", with a minimum score of 18 and a maximum score of 90. High scores are interpreted as high levels of sport self-regulation. When we look at the reliability results in the development study of the instrument, .84, .81, .85 and .92 internal consistency were calculated for each factor and overall, respectively. The Cronbach's alpha coefficient in the current sample is .91.

Sport Engagement Scale (SES): The Utrecht Work Engagement Scale (UWES), developed by Schaufeli et al. (2002) to measure engagement, was adapted to sport by Guillén and Martínez-Alvarado (2014). The scale consists of 15 questions with the dimensions of fitness, engagement and internalization. In the scale adapted to Turkish by Sırgancı et al. (2019), responses to questions (e.g., When I get up in the morning, I look forward to going to the gym) are scored on a 5-point Likert scale ranging from "Almost never" to "Almost always" with a minimum score of 15 and a maximum score of 75. Higher scores mean higher levels of exercise engagement. Reliability results in the development study were reported to be between .74-.90 for the dimensions and the overall scale, while reliability coefficients in the adaptation study were reported to be between .79-.91. The Cronbach's alpha coefficient in the current sample is .89.

Trait Sport-Confidence Inventory (TSCI): The instrument developed by Vealey (1986) to measure state and trait sport confidence consists of a total of 26 items, 13 items for each dimension. In the present study, the trait sport self-confidence form was used. In the scale adapted into Turkish by Engür et al. (2006), the responses to the questions (e.g., Compare your confidence in your ability to perform the skills necessary to be successful to the most confident athlete you know) were scored linearly between 1 and 9 as "Low", "Medium", and "High". The lowest possible score was 13 and the highest was 117, with higher scores indicating an increase in sports confidence. The reliability coefficient in the original study ranged between .83-.89, and the reliability coefficient in the adaptation study was calculated to .91. The Cronbach's alpha coefficient in the current sample is .94.

Athlete Burnout Questionnaire (ABQ): It is a 15-item measurement tool developed by Raedeke and Smith (2001) based on the Maslach Burnout Inventory (Maslach & Jackson, 1981) with three dimensions consisting of 5 items each: diminished sense of accomplishment, emotional-physical exhaustion, and depersonalization. The scale adapted to Turkish culture by Keleccek et al. (2016) consists of three dimensions and 13 items, similar to the original structure. The questions (e.g., I feel so tired from my training that I have trouble finding energy to do other things) are answered on a 5-point Likert scale ranging from "Never" to "Always"; the lowest score is 13 and the highest score is 65, and higher scores are interpreted as increased

burnout in athletes. Reliability in the development study ranged from .84-.87, and reliability coefficients in the adaptation study ranged from .75-.87. The Cronbach's alpha coefficient in the current sample is .89.

Data Collection

The researchers visited the athletes in their classrooms in May 2024. They explained the purpose of the research and declared the approval of the ethics committee. They shared the link of the questionnaire forms, which they transferred to the online environment, with the volunteers and allowed them to respond. As inclusion criteria, it was determined that the age of sport should not be less than 1 year and be active in at least one sport branch.

Analysis of Data

As there were no missing data in the responses collected from 303 participants, no assignment was made. Four responses with a sport age of less than 1 year were not included in subsequent analyses because they did not meet the study inclusion criteria. All participants reported that they had no diagnosed mental disorder, were not taking any medication, had no chronic disease, and had no limb loss. Using SPSS 27, responses to questions that required reverse scoring were recoded and eight outliers were excluded to ensure normality. Following skewness and kurtosis analyses, correlations were used to examine the direction and magnitude of relationships between variables, t-tests were used to examine whether variables differed by biological gender, and ANOVA and Scheffe post hoc tests were used to determine whether they differed by education duration. In addition, Cronbach's alpha was used to test the reliability of the work surveys in the current sample, and Hayes PROCESS macro v4.2 was used to examine the regression relationships between the total scores of the measures.

RESULTS

Testing Assumptions

Hayes (2022) reports that some assumptions must be met in order to provide the fundamentals of regression analysis. These are linearity, normality, homoscedasticity, and independence. The P-P plot generated to test linearity showed that the residuals were frequently clustered on the diagonal, so there were no curves indicating non-normality. To test normality, z-scores were also computed to identify outliers, and responses with $|z|$ scores greater than 3 were excluded based on Kline's (2020) criterion. Then, observations made using box plots and histograms showed that there were no data that deviated from the distribution. When the scatterplot created to test for homoscedasticity was examined, it was seen that the points were scattered, so it was concluded that there were no data indicating homoscedasticity. The calculation of the Durbin-Watson statistic of 1.81, which is used to test the independence assumption, shows that the errors are independent, considering that the acceptable range is between one and three (Field, 2024). Finally, based on the fact that the results of the collinearity statistic show that the tolerance is greater than .10 (.46-.73) and the VIF is less than 10 (1.37-2.19), it can be said that the problem of multiple collinearity among the predictor variables is not detected (Nayebi, 2020).

Descriptive Statistics

Table 1 presents the distribution and correlations of participants' mean scores from the questionnaires and some socio-demographic characteristics. Considering the minimum and maximum scores that can be obtained from the questionnaires, it can be said that the SSRS, SES, and TSCI means are relatively high and the ABQ means are relatively low. Pearson's correlation was used because the skewness and kurtosis of the measures and sport age were perfectly distributed (range: ± 1), and Spearman's correlation was used because chronological age was not normally distributed and grade level was ordinal (Hair et al., 2022). The correlation results show that there are moderate positive relationships between SSRS, SES, and TSCI, and low negative relationships between these three and ABQ. In addition, sport age was positively correlated with SSRS and SES at a low level, while grade level was negatively correlated with SES at a low level and positively correlated with ABQ at a low level. Chronological age was not significantly associated with the study variables.

Table 1. Descriptive statistics, distribution, and correlations

	Range	$\bar{X}$	SD	Skewness	Kurtosis	1	2	3	4	5	6
1 SSRS	54-90	76.00	8.81	-.14	-.44						
2 SES	43-75	62.28	7.73	-.17	-.51	.70*					
3 TSCI	47-117	93.30	16.73	-.40	-.61	.51*	.42*				
4 ABQ	13-61	33.16	10.73	.26	-.41	-.23*	-.19*	-.31*			
5 Sport age	1-20	8.19	3.76	.44	-.05	.25**	.20*	.10	.03		
6 Age	18-34	21.59	2.25	1.6	5.92	.02	-.10	-.05	.10	.15**	
7 Grade	1-4	-	-	-	-	-.03	-.14**	-.11	.18**	-.04	.59**

SSRS: Sportive Self-Regulation Scale, SES: Sport Engagement Scale, TSCI: Trait Sport-Confidence Inventory, ABQ: Athlete Burnout Questionnaire, *Pearson's correlation ($p < .001$), **Spearman's correlation ($p < .01$)

According to the results in Table 2, which compares the mean scores of the measures by groups, the mean TSCI score of women is lower than that of men. There is no significant difference in the other mean scores between the genders. Similarly, the mean TSCI scores of those involved in individual sports are lower than those of those involved in group sports, but the other mean scores do not differ by type of sport. Comparing grade levels, the SSRS means of the groups do not differ, the SES and TSCI scores of the 4th graders are lower than those of the 2nd graders, and the ABQ scores are higher than those of the other three grades.

Table 2. Comparison of group mean scores

	Groups	n	SSRS	SES	TSCI	ABQ
Gender	Female ^a	111	75.80±8.27	61.19±7.75	88.91±17.64	32.16±9.64
	Male ^b	192	76.13±8.98	62.91±7.67	95.84±15.67	33.73±11.30
	p*		- (t=-.31, p=.76)	- (t=-1.88, p=.06)	a<b (t=-3.43, p=.01)	- (t=-1.28, p=.20)
Type of sport	Individual ^a	163	75.21±9.04	62.25±7.78	91.29±16.65	33.43±10.78
	Team ^b	140	76.94±8.25	62.31±7.70	95.64±16.58	32.84±10.71
	p*		- (t=-1.73, p=.09)	- (t=-.07, p=.94)	a<b (t=-2.27, p=.03)	- (t=.48, p=.63)
Grade	1st ^d	78	75.29±9.71	62.69±8.42	93.31±17.88	31.71±10.99
	2nd ^b	84	77.17±8.83	63.67±7.68	96.01±16.70	31.58±10.24
	3rd ^c	82	76.76±7.65	62.26±7.23	94.48±14.17	32.72±10.53
	4th ^d	59	74.25±8.38	59.80±7.09	87.80±17.61	37.92±10.23
	p**		- (F=1.68; p=.17)	b>d (F=3.07; p=.03)	b>d (F=3.06; p=.03)	a,b,c<d (F=5.20; p=.01)

SSRS: Sportive Self-Regulation Scale, SES: Sport Engagement Scale, TSCI: Trait Sport-Confidence Inventory, ABQ: Athlete Burnout Questionnaire, *t: Independent Sample t test; **F: ANOVA Test; a,b,c,d: Scheffe test for comparing differences between groups.

Mediation Analysis

Regression analysis based on the bootstrap method was used to determine whether SES and TSCI have mediating roles in the effect of athletes' SSRS levels on ABQ. The model was

evaluated with 95% confidence intervals (5000 bootstraps) based on PROCESS macro 4.2 (Hayes, 2022), and the significance of the indirect effects was decided according to whether the confidence intervals contained zero or not. The results are shown in Figure 1.

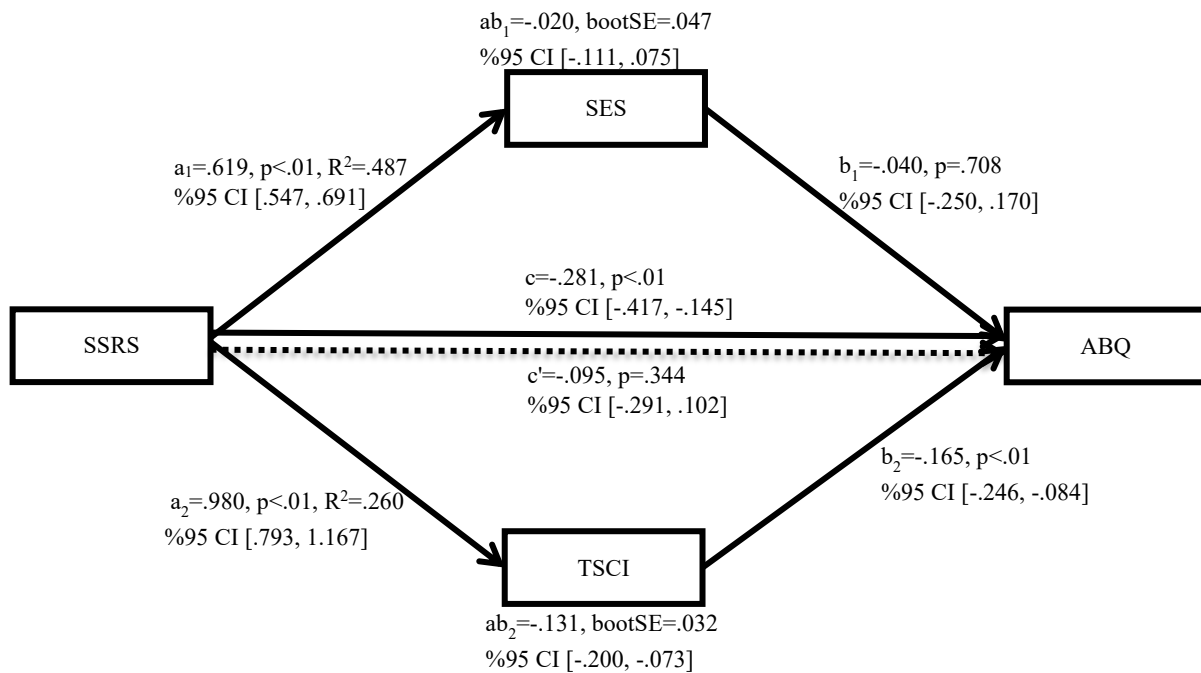


Figure 1. Mediation results

SSRS: Sportive Self-Regulation Scale, SES: Sport Engagement Scale, TSCI: Trait Sport-Confidence Inventory, ABQ: Athlete Burnout Questionnaire

Figure 1 shows that the total effect of SSRS on ABQ is significant ($c = -.281, p < .01, R^2 = .052, F_{(1, 301)} = 16.558$). However, when mediators were included in the model, the direct effect was not significant ($c' = -.095, p > .05, se = .100, t = -.948$). The effect of the independent variable SSRS on the mediating variables SES ($a_1 = .619, p < .01, R^2 = .487, F_{(1, 301)} = 285.602$) and TSCI ($a_2 = .980, p < .01, R^2 = .260, F_{(1, 301)} = 105.986$) is also significant. Among the mediating variables, SES did not have a significant effect on the dependent variable ABQ ($b_1 = -.040, p > .05, se = .107, t = -.376$), while the effect of the other mediating variable TSCI was significant ($b_2 = -.165, p < .01, se = .041, t = -4.016$).

In the established model, two indirect effects are tested to reveal the mediation results. The first indirect effect reveals whether SES has a mediating role in the relationship between SSRS and ABQ. When the results were evaluated, it was found that the first indirect effect was not significant ($ab_1 = -.020, se = .047, 95\% \text{ CI } [-.111, .075]$). The second indirect effect examined to determine the mediating role of TSCI in the relationship between SSRS and ABQ was significant ($ab_2 = -.131, se = .032, 95\% \text{ CI } [-.200, -.073]$). Considering that the direct effect of SSRS on ABQ was not significant, this result obtained in the second indirect effect can be considered as full mediation. The fully standardized effect size (K2) of the mediation effect was calculated to be $-.131$. When calculating the effect size, if $K2 = .01$, it is interpreted as low effect, if it is close to $.09$, it is interpreted as medium effect, and if it is close to $.25$, it is

interpreted as high effect (Preacher & Kelley, 2011). In this context, it can be said that the second indirect effect in the current study has a medium size. It was concluded that the hypothetical structure established between the study variables and presented in Figure 1 was not supported, and if the structure obtained based on the SEM results and presented in Figure 2 is interpreted, SSRS predicts SES and TSCI, which are planned as mediators. Since SES does not predict ABQ, there is no mediation. TSCI, on the other hand, predicts ABQ and when it is included in the equation, it eliminates the direct significant effect of SSRS on ABQ. In this case, H1 and H2 are accepted and H3 and H4 are partially accepted since SES does not predict ABQ.

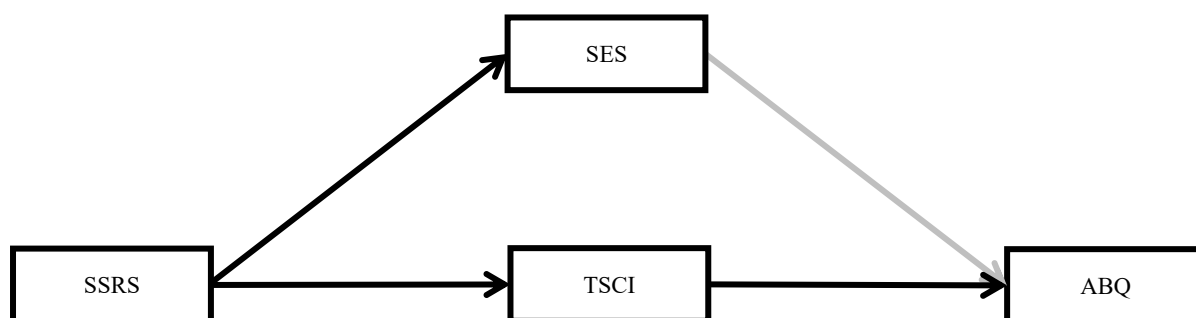


Figure 2. Structure obtained from SEM results

SSRS: Sportive Self-Regulation Scale, SES: Sport Engagement Scale, TSCI: Trait Sport-Confidence Inventory, ABQ: Athlete Burnout Questionnaire, →predictive, —not predictive

DISCUSSION and CONCLUSION

Self-regulation in athletes plays a fundamental role in maintaining performance and achieving goals. While self-regulation skills support athletes in coping with stress, increasing motivation, and maintaining emotional balance, burnout is a threat that emerges during periods of intense training. In this context, effective self-regulation strategies can protect both physical and psychological health by reducing athletes' feelings of burnout. The relationship between self-regulation and burnout in athletes is better understood especially through the mediation of self-confidence.

According to the results of our study, athletes' mean scores of self-regulation, sport engagement, and self-confidence are high and positively correlated, while their burnout scores are low and negatively correlated with the other three variables. Feltz (2007) states that sport engagement and self-confidence are important concepts in the emergence of success. In another study, it was observed that stress and burnout significantly decreased with sport self-regulation interventions, while self-confidence and self-regulatory capacity significantly increased (Dubuc-Charbonneau & Durand-Bush, 2015).

When the scores were compared by gender, it was found that the mean sport self-confidence score of female athletes was lower than that of male athletes. Similar to our results, studies in the literature report that male athletes have more sport self-confidence than female athletes (Jones et al., 1990; Jones et al., 1991; Karabulut, 2019; Karadağ, 2023; Lirgg, 1991). Another point that draws attention in this difference may be the different perspective due to

biological gender depending on different sport conditions. Because when the task is male-oriented, the situation is competitive, and the feedback is ambiguous, women's self-confidence is low (Lenney, 1977). We can also say that socio-cultural factors may be effective in low competence and physical endurance in women (Chalabaev et al., 2013; Trbojević & Petrović, 2020). Evaluating both our results and the literature, it is found that women have lower self-confidence than men. It is believed that this result may be due to the fact that women feel more physically and psychologically inadequate and behave more emotionally in competitions (Andretta & McKay, 2020).

Comparing measures by type of sport, athletes engaged in individual sports had lower self-confidence than those engaged in team sports. Fahiminezhad et al. (2014), who examined the self-confidence of athletes, found that the type of sport they were involved in did not affect their self-confidence. Karadağ (2023) found that the self-confidence of those involved in team sports was higher than that of those involved in individual sports. Compared to those engaged in team sports, perceived stress and sport anxiety were higher in individual sports participants, while sport motivation was found to be lower (Teh & Krishnan-Vasanthi, 2022). Pluhar et al. (2019) added that individual athletes' anxiety and depression scores were higher than those of team athletes, and that this group is more goal-oriented, whereas team athletes are more recreational. In another study, individual athletes used more technical coping and even self-blame, while team athletes used more behavioral avoidance (Nicholls et al., 2007). Since self-confidence is multifaceted, it is stated that this concept is important not only for individual athletes, but also for team athletes (Fransen et al., 2017). It is stated that peer interaction within the team positively affects self-confidence by increasing cognitive efficiency (Hwang et al., 2017). Hays et al. (2007) state that physical and mental preparation, competition and training performance, coach, social support, experience, and some individual specific factors are resources that support sport self-confidence, while poor performance, injury, inadequate preparation, and pressure are listed as factors that reduce self-confidence. The fact that mistakes made by individual athletes are attributed directly to themselves, while mistakes made by team athletes are attributed to the team in general, is considered another reason that may be effective in their low self-confidence (Gezer et al., 2017).

Self-regulation and sport engagement in athletes increase with age. On the other hand, self-confidence and burnout are not related to sport age. Öner and Aşçı (2020) concluded that years of sport participation had a positive effect on attachment styles, emotion regulation skills, and cognitive emotion regulation strategies of the participants in the study. Perry and Williams (1998) examined the sport self-confidence of athletes and concluded that those participants who have been doing sport for more than 10 years have higher self-confidence. Tekkurşun-Demir and Güvendi (2022) reached the conclusion that the year of doing sports had no effect on self-confidence. Doğru (2017) examined the self-confidence level of physical education students, and found that the self-confidence of students who do sports is higher. Sport age also refers to the duration of experience gained in sports. Therefore, there is an increase in expertise and self-regulatory behaviors with sport age (Cleary & Zimmerman, 2001). In addition, it can be said to have a positive effect on sport engagement through supportive factors such as more involvement in sport, more presence in sport environments, and socialization with other athletes (Guo et al., 2022).

Chronological age was not related to the study variables. This result may be due to the fact that sport is a professionally practiced discipline. This is because each branch of sport has its own specific requirements (Çolak & Kolukısa, 2017; Hughes & Bartlett, 2002; İlhan et al., 2011), which cannot be met by chronological age. For this reason, we can say that self-regulation and sport engagement in athletes are more related to the time spent in the branch and the effort given, i.e., sport age.

With the increase of class level, attachment and self-confidence scores decrease and burnout increases in athletes. In contrast to the current results, Karadağ (2023) reported that self-confidence of athletes did not differ significantly according to class level. Similarly, Ağbuğa and Pepe (2020) concluded that self-confidence in sports was not related to grade level in their study on undergraduate students of physical education. In the current study, the engagement, self-confidence, and burnout scores of senior students were evaluated to be more negative than those of lower grades, which may be a result of the intensity and workload brought about by academic education as they are exposed to the theoretical and practical knowledge of the sport discipline during their educational period (Şimşek, 2022).

Looking at the SEM results of our study, self-regulation has positive effects on the mediating variables of sport confidence and sport engagement. Furthermore, when these two variables are included in the relationship between self-regulation and burnout, the overall effect on burnout is significant; however, the direct effect becomes insignificant. Finally, while sport engagement does not predict burnout, sport self-confidence has a significant effect. In this case, our study hypotheses H1 and H2 are accepted, and H3 and H4 are partially accepted, as commitment does not predict burnout. Dubuc-Charbonneau & Durand- Bush (2015) examined the effects of self-regulation on stress, burnout, and self-regulation ability in athletes. According to the results of the study, it was found that self-regulation capacity reduced the level of burnout in athletes. McNeill et al. (2019) investigated the relationship between self-regulation and burnout and reached the conclusion that self-regulation reduces burnout. Kljajic et al. (2017), in their study of burnout, engagement, self-regulation, and academic achievement, concluded that self-regulation skills can reduce burnout in individuals. Zhang et al. (2014), in their study on self-regulation skills of college students, came to the conclusion that students' burnout may decrease with increased self-regulation skills. In the study by Hernandez et al. (2021), it was observed that athletes who demonstrated high commitment to sport had lower failure scores. Altfeld et al. (2017) examined the effects of team training sessions organized to improve self-regulation skills in young basketball players and concluded that sport self-regulation skills significantly improved basketball players' coping with negative thoughts, and the strategies implemented provided long-term benefits to athletes.

We feel the need to make a reminder about the full mediation result we obtained. Hayes (2022) warns that full mediation results, as in our study, are not more valuable or desirable than partial mediation. Indeed, based on a result in which self-confidence is a full mediator in athletes, it may be possible to make risky inferences, such as that we know everything we need to know about the process under study and that there is no need to propose a different mechanism between self-regulation and burnout. Indeed, the finding that self-confidence is a full mediator says nothing about the presence or absence of other possible mediators in the effect of self-regulation on burnout. He adds that if there is more than one variable that fully

mediates this effect because they are considered in isolation from each other, it is not very valuable to claim that our preferred self-confidence does so.

Limitations and Future Studies

As the current study is a cross-sectional correlational survey research, i.e. the measurements of the study variables were collected in a certain period of time, it is a limitation that a definite causal relationship between the factors examined cannot be established. It is recommended that longitudinal studies be planned to better determine these relationships. In addition, if it is accepted as another limitation that the data collected are based on self-report, it is recommended that future studies should measure the self-regulation performance of athletes to obtain more valid results and examine the relationship between the variables of the current study. Another limitation is related to the sample, as the athletes were only undergraduate students at the Faculty of Sports Science of Bayburt University. In order to test the external validity, we suggest that the study be repeated with different samples of athletes.

Based on our results, we have some suggestions for future research and for coaches. Based on the result that sport age is positively correlated with self-regulation, if the goal is to train athletes who are successful in self-regulation, it is recommended that they should be involved in sport at the earliest possible age and trained with more preparation and practice studies in their own branches. It is important to consider that the risk of burnout increases with the time that student athletes spend in training. Considering that the self-confidence of female athletes is lower than that of male athletes, it is suggested that future studies should identify gender stereotypes of athletes and examine the effect of the biological gender on self-confidence when this variable is kept under control. Furthermore, if we accept the statements that males use strategies related to sport-specific abilities more than females, we suggest that coaches should plan additional studies with females with biological sex differences.

Given that the self-confidence of individual sports is lower than that of team sports, it is suggested that coaches should use interventions in which they can control factors such as stress and anxiety that may affect the self-confidence of athletes in this group, while strengthening factors such as motivation and coping. Given that self-regulation reduces burnout through self-confidence, we suggest that confidence should be built to prevent burnout in athletes, and interventions to increase self-regulation should be expanded to develop self-confidence.

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Researchers' Statement of Contribution Rate: Research design was carried out by İA, HÇ; Statistical analysis by İA; Preparation of the manuscript by İA, HÇ; Data collection by İA, HÇ.

Ethical Approval

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REFERENCES

- Ağbuğa, F., & Pepe, K. (2020). Comparison of self-confidence levels of students at the faculty of sport sciences according to gender department and grade levels. *Physical Education and Sport Sciences Journal*, 14(3), 345-353.
- Akeren, İ., & Çingöz, Y.E. (2023). Sportive self-regulation scale (SSRS): Study of development, validity and reliability. *International Journal of Education Technology and Scientific Researches*, 8(23), 1146-1169. <http://dx.doi.org/10.35826/ijetsar.592>
- Altfeld, S., Langenkamp, H., Beckmann, J., & Kellmann, M. (2017). Measuring the effectiveness of psychologically oriented basketball drills in team practice to improve self-regulation. *International Journal of Sports Science & Coaching*, 12(6), 725-736. <https://doi.org/10.1177/1747954117738891>
- Andersen, M. B., & Williams, J. M. (1988). A Model of stress and athletic injury: Prediction and prevention. *Journal of Sport and Exercise Psychology*, 10(3), 294-306. <https://doi.org/10.1123/jsep.10.3.294>
- Andretta, J. R., & McKay, M. T. (2020). Self-efficacy and well-being in adolescents: A Comparative study using variable and person-centered analyses. *Children and Youth Services Review*, 118, Article 105374. <https://doi.org/10.1016/j.childyouth.2020.105374>
- Aunola, K., Sorkkila, M., Viljaranta, J., Tolvanen, A., & Ryba, T. V. (2018). The Role of parental affection and psychological control in adolescent athletes' symptoms of school and sport burnout during the transition to upper secondary school. *Journal of Adolescence*, 69, 140-149. <https://doi.org/10.1016/j.adolescence.2018.10.001>
- Backović, D.V., Živojinović J. I., Maksimović J. & Maksimović M. (2012). Gender differences in academic stress and burnout among medical students in final years of education. *Psychiatria Danubina*, 24(2), 175-181.
- Balk, Y. A., & Englert, C. (2020). Recovery self-regulation in sport: Theory, research, and practice. *International Journal of Sports Science & Coaching*, 15(2), 273-281. <https://doi.org/10.1177/1747954119897528>
- Bartulovic, D., Young, B. W. & Baker, J. (2017). Self-regulated learning predicts skill group differences in developing athletes. *Psychology of Sport and Exercise*, 31, 61-69. <https://doi.org/10.1016/j.psychsport.2017.04.006>
- Bekaroglu, E., & Bozo, Ö. (2017). The Relationship between attachment styles, emotion regulation strategies, and health-promoting behaviors: Extreme sports participants versus non-participants. *Journal of Clinical Sport Psychology*, 11(2), 89-106. <https://doi.org/10.1123/jcsp.2016-0023>
- Chalabaev, A., Sarrazin, P., Fontayne, P., Boiché, J., & Clément-Guillotin, C. (2013). The Influence of sex stereotypes and gender roles on participation and performance in sport and exercise: Review and future directions. *Psychology of Sport and Exercise*, 14(2), 136-144. <https://doi.org/10.1016/j.psychsport.2012.10.005>
- Cleary, T. J., & Zimmerman, B. J. (2001). Self-regulation differences during athletic practice by experts, non-experts, and novices. *Journal of Applied Sport Psychology*, 13(2), 185-206. <https://doi.org/10.1080/104132001753149883>
- Çolak H., & Kolukisa Ş. (2017). Comparison of some motorical characteristics of athletes in different branches. *Journal of Current Researches on Social Sciences*, 7(2), 307-316.
- Creswell, J. W. (2017). *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları* (Çev.: S. B. Demir). Eğiten Kitap.
- Doğru, Z. (2017). Evaluation of self-confidence and self-efficacy perception levels of physical education and sport education department students. *Journal of Physical Education and Sports Studies*, 9(1), 13-23.
- Dubuc-Charbonneau, N., & Durand-Bush, N. (2015). Moving to action: The Effects of a self-regulation intervention on the stress, burnout, well-being, and self-regulation capacity levels of university student-athletes. *Journal of Clinical Sport Psychology*, 9(2), 173-192. <https://doi.org/10.1123/jcsp.2014-0036>
- Durand-Bush, N., & Salmela, J. H. (2002). The Development and maintenance of expert athletic performance: Perceptions of world and olympic champions. *Journal of Applied Sport Psychology*, 14(3), 154-171. <https://doi.org/10.1080/10413200290103473>
- Engür, M., Tok., S., & Tatar, A. (2006). Adaptation of trait and state sport confidence inventory into Turkish. In the 9th International Sports Sciences Congress Proceedings, (pp. 858-860). Muğla. November 3-5.
- Fahiminezhad, A., Khani, S., & Ghasemi, A. (2014). The Comparison of sport confidence (trait, state, and sports) between young athletes in individual and team sports in Shahrood city. *European Journal of Experimental Biology*, 4(3), 458-462.

- Feltz, D. L. (2007). Self-confidence and sports performance. In D Smith, M Bar-Eli (Eds.), *Essential readings in sport and exercise psychology* (pp. 278–294). Human Kinetics
- Field, A. (2024). *Discovering statistics using IBM SPSS statistics (6th ed.)*. Sage.
- Fransen, K., Mertens, N., Feltz, D. & Boen, F. (2017). “Yes, we can!” review on team confidence in sports. *Current Opinion in Psychology*, 16, 98-103. <https://doi.org/10.1016/j.copsyc.2017.04.024>
- Gezer, E. D., Aslan, C. S., Dalkiran, O., & Kılıçgil, E. (2017). Comparison of social skill levels of elite sportsmen at different sports branches according to selected variables. *Mehmet Akif Ersoy University Journal of Social Sciences Institute*, 9(22), 251-258. <https://doi.org/10.20875/makusobed.349620>
- González-Hernández, J., da Silva, C. M., Monteiro, D., Alesi, M., & Gómez-López, M. (2021). Effects of commitment on fear of failure and burnout in teen Spanish handball players. *Frontiers in Psychology*, 12, Article 640044. <https://doi.org/10.3389/fpsyg.2021.640044>
- Guillén, F., & Martínez-Alvarado, J. R. (2014). The Sort engagement scale: An Adaptation of the Utrecht Work Engagement Scale (UWES) for the sports environment. *Universitas Psychologica*, 13(3), 975-984. <https://doi.org/10.1114/Javeriana.UPSY13-3.sesa>
- Guo, Z., Yang, J., Wu, M., Xu, Y., Chen, S., & Li, S. (2022). The Associations among athlete gratitude, athlete engagement, athlete burnout: A Coss-lagged study in China. *Frontiers in Psychology*, 13, Article 996144. <https://doi.org/10.3389/fpsyg.2022.996144>
- Gustafsson, H., & Skoog, T. (2012). The Meditational role of perceived stress in the relation between optimism and burnout in competitive athletes. *Anxiety, Stress & Coping*, 25(2), 183-199. <https://doi.org/10.1080/10615806.2011.594045>
- Gustafsson, H., Hassmén, P., Kenttä, G., & Johansson, M. (2008). A Qualitative analysis of burnout in elite Swedish athletes. *Psychology of Sport and Exercise*, 9(6), 800-816. <https://doi.org/10.1016/j.psychsport.2007.11.004>
- Gustafsson, H., Martinent, G., Isoard-Gautheur, S., Hassmén, P., & Guillet-Descas, E. (2018). Performance based self-esteem and athlete-identity in athlete burnout: A Person-centered approach. *Psychology of Sport and Exercise*, 38, 56-60. <https://doi.org/10.1016/j.psychsport.2018.05.017>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.)*. Sage.
- Halson, S. L., & Jeukendrup, A. E. (2004). Does overtraining exist? An Analysis of overreaching and overtraining research. *Sports Medicine*, 34, 967-981. <https://doi.org/10.2165/00007256-200434140-00003>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A Regression-based approach (3rd ed.)*. Guilford.
- Hays, K., Maynard, I., Thomas, O., & Bawden, M. (2007). Sources and types of confidence identified by world class sport performers. *Journal of Applied Sport Psychology*, 19(4), 434-456. <https://doi.org/10.1080/10413200701599173>
- Hughes M. D., & Bartlett R. (2002). The Ue of performance indicators in performance analysis. *Journal of Sports Science*, 20(10), 739-754. <https://doi.org/10.1080/026404102320675602>
- Hwang, S., Machida, M., & Choi, Y. (2017). The Effect of peer interaction on sport confidence and achievement goal orientation in youth sport. *Social Behavior and Personality: An International Journal*, 45(6), 1007-1018. <https://doi.org/10.2224/sbp.6149>
- İlhan, E. L., Gencer, E., & Ulucan, H. (2011). Examining the emotional adjustment levels of primary school students who participate and do not participate in school sports. *Ahi Evran University Journal of Kırşehir Education Faculty*, 12(4), 265-276.
- Jones, G., Swain, A., & Cale, A. (1991). Gender differences in precompetition temporal patterning and antecedents of anxiety and self-confidence. *Journal of Sport & Exercise Psychology*, 13(1), 1–15.
- Jones, J. G., Swain, A., & Cale, A. (1990). Antecedents of multidimensional competitive state anxiety and self-confidence in elite intercollegiate middle-distance runners. *The Sport Psychologist*, 4(2), 107-118. <https://doi.org/10.1123/tsp.4.2.107>
- Jonker, L., Elferink-Gemser, M. T., de Roos, I. M., & Visscher, C. (2012). The Role of reflection in sport expertise. *The Sport Psychologist*, 26(2), 224-242. <https://doi.org/10.1123/tsp.26.2.224>

- Jonker, L., Elferink-Gemser, M.T., & Visscher, C. (2010). Differences in self-regulatory skills among talented athletes: The Significance of competitive level and type of sport. *Journal of Sport Sciences*, 28(8), 901-908. <https://doi.org/10.1080/02640411003797157>
- Jordalen, G., Lemyre, P. N., & Durand-Bush, N. (2016). Exhaustion experiences in junior athletes: The Importance of motivation and self-control competencies. *Frontiers in Psychology*, 7, Article 1867. <https://doi.org/10.3389/fpsyg.2016.01867>
- Jordalen, G., Lemyre, P. N., & Durand-Bush, N. (2019). Interplay of motivation and self-regulation throughout the development of elite athletes. *Qualitative Research in Sport, Exercise and Health*, 12(3), 377–391. <https://doi.org/10.1080/2159676X.2019.1585388>
- Karabulut, Ö. (2019). *Investigation of athletes' sporty self confidence levels according to various variables (İstanbul /Bağcılar case)*. Master's thesis, İnönü University, Institute of Health Sciences, Bolu.
- Karadağ, C. C. (2023). *Investigation of cognitive flexibility, sportive self-confidence and sport specific achievement motivation in individual and team athletes*. Master's thesis, Aksaray University, Institute of Social Sciences, Aksaray.
- Karasar, N. (2014). *Scientific research method: Concepts, principles, techniques (27th ed.)* [Translated title]. Nobel Publishing. [In Turkish].
- Kelecsek, S., Kara, F. M., Çetinkalp, F. Z. K., & Aşçı, F. H. (2016). The Turkish adaptation of athlete burnout questionnaire. *Hacettepe Journal of Sport Sciences*, 27(4), 149-161. <https://doi.org/10.17644/sbd.311371>
- Kline, R. B. (2020). *Becoming a behavioral science researcher: A Guide to producing research that matters (2nd ed.)*. Guilford.
- Kljajic, K., Gaudreau, P., & Franche, V. (2017). An investigation of the 2×2 model of perfectionism with burnout, engagement, self-regulation, and academic achievement. *Learning and Individual Differences*, 57, 103-113. <https://doi.org/10.1016/j.lindif.2017.06.004>
- Kuloor, H., & Kumar, A. (2020). Self-confidence and sports. *International Journal of Indian Psychology*, 8(4), 1-6.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. McGraw-Hill.
- Lemyre, P. N., Roberts, G. C., & Stray-Gundersen, J. (2007). Motivation, overtraining, and burnout: Can self-determined motivation predict overtraining and burnout in elite athletes? *European Journal of Sport Science*, 7(2), 115-126. <https://doi.org/10.1080/17461390701302607>
- Lenney, E. (1977). Women's self-confidence in achievement settings. *Psychological Bulletin*, 84(1), 1–13. <https://doi.org/10.1037/0033-2909.84.1.1>
- Lin, C. H., Lu, F. J. H., Chen, T. W., & Hsu, Y. (2021). Relationship between athlete stress and burnout: A Systematic review and meta-analysis. *International Journal of Sport and Exercise Psychology*, 20(5), 1295–1315. <https://doi.org/10.1080/1612197X.2021.1987503>
- Lirgg, C.D. (1991). Gender differences in self-confidence in physical activity: A Meta-analysis of recent studies. *Journal of Sport & Exercise Psychology*, 13(3), 294- 310. <https://doi.org/10.1123/jsep.13.3.294>
- Madjlesi, M. H., Zareei, A., & Nikaeen, Z. (2017). Relationship between leisure time and self-regulation and goal orientation among professional athletes: A New perspective for improving athletes' physical performance. *Biosciences Biotechnology Research Asia*, 14(2), 547-556. <http://dx.doi.org/10.13005/bbra/2478>
- Maslach, C., & Jackson, S. E. (1981). The Measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99-113. <https://doi.org/10.1002/job.4030020205>
- McCade, D., Frewen, A., & Fassnacht, D. B. (2021). Burnout and depression in Australian psychologists: The Moderating role of self-compassion. *Australian Psychologist*, 56(2), 111–122. <https://doi.org/10.1080/00050067.2021.1890979>
- McNeill, K., Durand-Bush, N. & Lemyre, P. N. (2019). Can learning self-regulatory competencies through a guided intervention improve coaches' burnout symptoms and wellbeing? *Journal of Clinical Sport Psychology*, 14(2), 149-169. <https://doi.org/10.1123/jcsp.2018-0019>
- Nayebi, H. (2020). Nayebi, H. (2020). *Advanced statistics for testing assumed casual relationships (Vol. 65)*. Springer.
- Nédélec, M., McCall, A., Carling, C., Legall, F., Berthoin, S., & Dupont, G. (2012). Recovery in soccer: part I—post-match fatigue and time course of recovery. *Sports Medicine*, 42, 997-1015. <https://doi.org/10.1007/BF03262308>

- Nicholls, A. R., Polman, R., Levy, A. R., Taylor, J., & Cobley, S. (2007). Stressors, coping, and coping effectiveness: Gender, type of sport, and skill differences. *Journal of Sports Sciences*, 25(13), 1521-1530. <https://doi.org/10.1080/02640410701230479>
- Öner, Ç., Aşçı, F. H. (2020). Investigation of the role of attachment styles in determining emotion regulation skills and cognitive emotion regulation strategies. *Journal of Sport Sciences Research*, 5(2), 202-219. <https://doi.org/10.25307/jssr.798619>
- Özdemir, E. (2016). Tarama yöntemi. M. Metin (Ed.), In *The from theory to practice: Scientific research methods in education* (pp. 77-97), Pegem.
- Perry, J. D., & Williams, J. M. (1998). Relationship of intensity and direction of competitive trait anxiety to skill level and gender in tennis. *The Sport Psychologist*, 12(2), 169-179. <https://doi.org/10.1123/tsp.12.2.169>
- Pilgrim, J., Kremer, P., & Robertson, S. (2018). The Self-regulatory and task-specific strategies of elite-level amateur golfers in tournament preparation. *The Sport Psychologist*, 32(3), 169-177. <https://doi.org/10.1123/tsp.2017-0056>
- Pluhar, E., McCracken, C., Griffith, K. L., Christino, M. A., Sugimoto, D., & Meehan III, W. P. (2019). Team sport athletes may be less likely to suffer anxiety or depression than individual sport athletes. *Journal of Sports Science & Medicine*, 18(3), 490-496.
- Preacher, K. J. & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods* 16(2), 93-115. <https://doi.org/10.1037/a0022658>
- Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport and Exercise Psychology*, 23(4), 281-306. <https://doi.org/10.1123/jsep.23.4.281>
- Raedeke, T. D., & Smith, A. L. (2004). Coping resources and athlete burnout: An Examination of stress mediated and moderation hypotheses. *Journal of Sport and Exercise Psychology*, 26(4), 525-541. <https://doi.org/10.1123/jsep.26.4.525>
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The Measurement of engagement and burnout: A Two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3, 71-92. <https://doi.org/10.1023/A:1015630930326>
- Şimşek, S. (2022). *The relationship between self-efficacy, psychological well being, athlete burnout and success in elite volleyball players*. Master's thesis, Aksaray University, Institute of Social Sciences, Aksaray.
- Sırgancı, G., Ilgar, E. A., & Cihan, B. B. (2019). A study on validity and reliability of sports engagement scale. *Journal of Youth Research*, 7(17), 171-191.
- Soper, D.S. (2024). A-priori sample size calculator for structural equation models [Software]. Retrieved from: <http://www.danielsoper.com/statcalc>. Access date: 21.04.2024
- Sorkkila, M., Aunola, K., Salmela-Aro, K., Tolvanen, A., & Ryba, T. V. (2018). The Co-developmental dynamic of sport and school burnout among student-athletes: The Role of achievement goals. *Scandinavian Journal of Medicine & Science in Sports*, 28(6), 1731-1742. <https://doi.org/10.1111/sms.13073>
- Teh, R., & Krishnan-Vasanthi, R. (2022). The Effects of individual vs. team sports on perceived stress, sports anxiety and sports motivation among competitive youth athletes. *Journal of Sport & Health Research*, 14(3), 395-403. <https://doi.org/10.58727/jshr.96641>
- Tekkurşun-Demir, G. & Güvendi, B. (2022). Associations between self-confidence, courage, and athlete identity among national physically disabled athletes. *International Journal of Turkish Sport and Exercise Psychology*, 2(1), 1-15. <https://doi.org/10.55376/ijtsep.1090193>
- Toering T., Elferink-Gemser, M. T., Jordet, G., & Visscher C. (2009). Self-regulation and performance level of elite and non-elite youth soccer players. *Journal of Sport Sciences*, 27, 1509-1517. <https://doi.org/10.1080/02640410903369919>
- Trbojević, J., & Petrović, J. (2021). Self-perception of sporting abilities of female athletes when compared with same-sex and opposite-sex athletes. *Facta Universitatis, Series: Physical Education and Sport*, 18(3), 611-619. <https://doi.org/10.22190/FUPES200510059K>
- Turnbull, M. G., & Rhodes, P. (2019). Burnout and growth: Narratives of Australian psychologists. *Qualitative Psychology*, 26(1), 35-46. <https://doi.org/10.1037/qup0000146>

- Uğur, C. (2018). *Investigation of the relationship between emotional regulation difficulties and socio-demographic characteristics over the vocational and technical Anatolian high school students who take physical education course (example of Antakya)*. Master's thesis, Çağ University, Institute of Social Sciences, Mersin.
- Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport and Exercise Psychology*, 8(3), 221-246. <https://doi.org/10.1123/jsep.8.3.221>
- Vealey, R. S., Garner-Holman, M., Hayashi, S. W., & Giacobbi, P. (1998). Sources of sport-confidence: Conceptualization and instrument development. *Journal of Sport and Exercise Psychology*, 20(1), 54-80. <https://doi.org/10.1123/jsep.20.1.54>
- Zhang, S., Shi, R., Yun, L., Li, X., Wang, Y., He, H. & Miao, D. (2014). Self-regulation and study-related health outcomes: A Structural equation model of regulatory mode orientations, academic burnout and engagement among university students. *Social Indicators Research*, 123(2), 585-599. <https://doi.org/10.1007/s11205-014-0742-3>
- Zimmerman, B. J. (2000). Attaining self-regulation: A Social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50031-7>
- Zivnуска, S., Carlson, J., Carlson, D., Harris, R., & Harris, K. (2019). Social media addiction and social media reactions: The Implications for job performance. *The Journal of Social Psychology*, 159(6), 746-760. <https://doi.org/10.1080/00224545.2019.1578725>



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