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The Investigation of the Relationship Between Athletes' Levels of Imagery, Self-Talk, and Athlete Engagement

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Abstract

Aim: In the study, it was aimed to examine the relationship between imagery, self-talk and athlete engagement levels of athletes and the effects of variables such as gender, branch and athletic background on these concepts.

Method: The research is a descriptive study examined with quantitative research methods and 322 athletes participated in the study. "Sport Imagery Inventory", "Self-Talk Questionnaire" and "Athlete Engagement Questionnaire" were used. The data were normally distributed and analyzed by parametric analysis.

Results: A statistically significant difference was found in the Sport Imagery levels of the athletes in terms of gender variable, in the Self-Talk levels in terms of branch type variable, and in the Athlete Engagement and Sport Imagery levels in terms of athletic background variable. In addition, there was a positive relationship between Athlete Engagement levels and Sport Imagery and Self-talk levels, and a positive relationship between Sport Imagery and Self-talk levels.

Conclusion: In this context, it is thought that athletes' gender, branch type, and athletic background are important variables affecting the levels of Sport Imagery, Self-Talk, and Athlete Engagement, and that the positive relationships formed in the concepts examined in this direction will make a significant contribution to increasing the performance of athletes.

Key words: *Atlhete Engagement, Sport Imagery, Self-Talk.*

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INTRODUCTION

Sporting activities conducted within a scientific framework help athletes to experience a successful process, both physically and psychologically. In this context, it is important that coaches acquire a thorough understanding of the theoretical knowledge that can enhance athletic performance (D'Isanto et al., 2019). Research has shown that the psychological state of athletes is often more important than their physical, technical and tactical abilities (Altıntaş & Akalan, 2008). Therefore, it is recommended that achieving optimal performance should be based not only on training knowledge, but also on psychological training (Yalnız, 2016). Psychological training is described as a process that focuses on improving attention, perception, motivation and stress management during sport activities (Akandere & Aktaş, 2018).

Through training programmes that take psychological factors into account, athletes can achieve success in areas such as controlling emotional and cognitive processes, gaining self-confidence, increasing motivation, managing stress and learning new skills (Günışık,1990). In this sense, the concept of imagery, which can be used; to visualise non-existent images, to anticipate future movements or events, and to form associations, can be applied in various contexts" (Taylor et al., 1998). Therefore, the ability to use imagery emerges as a significant factor that enhances the success of athletes in sports competition or preparation.

Talking to ourselves is a very natural behaviour in our daily lives. This repeated behavior plays a vital role in shaping our feelings and thoughts (Bayköse et al., 2017). It has been noted that there is a lack of theoretically based research on the theoretical underpinnings of self-talk (Hardy, 2006). However, Bandura's and Vygotsky's work on cognitive developmental theory has been highlighted as a potential foundational reference in this regard (Bandura, 1998; Vygotsky, 1986).

Self-talk is defined as an internal dialogue that involves the interpretation, evaluation, and cognitive restructuring or modification of one's emotions, thoughts, and perceptions, while also allowing individuals to empower themselves internally through self-suggestion (Nergiz et al., 2015). Researchers emphasise that this internal dialogue, or self-talk, does not only take place within the individual, but also has an external dimension, and that it would be a mistake to neglect this aspect (Yılmaz et al., 2015).

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Initially, researchers distinguished between positive and negative self-talk. Weinberg defines the strategy of affirmative self-talk as the maintenance of a positive internal or external dialogue to increase the athlete's focus and help them learn from their mistakes (Weinberg et al., 1984). In contrast, negative self-talk is seen as a state that increases feelings of inadequacy and anxiety. More recent approaches suggest that the concept of self-talk is multidimensional and that this process can be shaped to enhance instruction or motivation (Bayköse et al., 2017).

It has been noted that the concept of engagement, which has positive effects on the psychological characteristics of athletes, holds a significant place not only in sport psychology but also within the broader domain of positive psychology, and that research into the relationship between this concept and sport is increasing (Seligman & Csikszentmihalyi, 2000). Researchers in organisational psychology define organisational commitment as the act of members combining their internal and external energies to work towards the goals of the organisation (Kahn, 1992). This combined internal and external energy is thought to enable individuals to have positive experiences and develop a form of commitment to their assigned tasks. The concept of athlete engagement, constructed by synthesising interviews with athletes and existing literature, refers to a sustained and positive cognitive-affective experience in sport activities, accompanied by elements such as self-confidence, dedication and vitality. This concept includes components such as belief, effort, energy and enjoyment (Lonsdale et al., 2007b).

In light of these discussions, this study aims to investigate the interaction between imagery, self-talk, and athlete participation, which can positively or negatively affect athletic performance. In this context, the main research question is: Is there a positive or negative relationship between imagery, self-talk, and athlete engagement? The sub-questions are: Are there significant differences in these concepts in terms of gender, sport type, and athletic background?

METHOD

Research model

When evaluated using quantitative research methods, this study is descriptive in nature, examining the predictive effects of relationships between variables (Baltacı, 2018).

Population and sample

This study was carried out on 322 athletes involved in either individual or team sports. A total of 322 athletes voluntarily participated in the study, of which 186 (57.8%) were female and 136 (42.2%) were male. It was found that 184 (57.1%) of the athletes were involved in team sports, 287 (89.1%) had a sports licence and 67 (20.8%) had "3-4 years" of sports experience. Non-probability convenience sampling was used to select the sample for the study. A priori power analysis was conducted using G*Power 3.1.9.7 (Faul et al., 2009) to determine the required sample size for the one-way analysis of variance (ANOVA). Assuming a medium effect size ($f = 0.25$), an alpha level of 0.05, and a statistical power of 0.80, the minimum required total sample size was calculated as 128 participants. Given that the present study included 322 athletes, the sample size was more than sufficient to detect statistically meaningful group differences.

Data collection tools

The descriptive characteristics of the athletes and the data concerning the independent variables were collected through the Personal Information Form, the Sport Imagery Inventory, the Self-Talk Questionnaire, and the Athlete Engagement Questionnaire.

Personal Information Form: This researcher-developed questionnaire includes items assessing the socio-demographic characteristics of the participating athletes. The Personal Information Form comprises questions regarding the athletes' gender, sport branch, and athletic background.

Sport *Imagery Inventory:* The Sport Imagery Inventory was originally created by Hall et al. (1998), and its Turkish adaptation was carried out by Kızıldağ & Tiryaki (2012). While the initial version comprised five sub-dimensions and 30 items, later studies demonstrated that the inventory now consists of four sub-dimensions and 21 items. To evaluate the construct validity of the inventory, the data were analyzed using factor analysis, which revealed that four factors explained 51% of the variance. The Sport Imagery Inventory includes four sub-dimensions, identified as Cognitive Imagery (CI),

Motivational Specific Imagery (MSI), Motivational General Arousal (MGA) and Motivational General Mastery (MGM). The Cronbach alpha (α) coefficients for the sub-dimensions of the Sport Imagery Inventory were found to be 0.81 for the "Cognitive Imagery" sub-dimension, 0.80 for the "Motivational Specific" sub-dimension, 0.71 for the "Motivational General-Arousal" sub-dimension and 0.59 for the "Motivational General-Mastery" sub-dimension Kızıldağ & Tiryaki, 2012). In this study, the Cronbach alpha (α) values for the sub-dimensions ranged from 0.77 to 0.87.

Self-Talk Questionnaire: The Self-Talk Questionnaire was created by Zervas et al. (2007), and its Turkish adaptation was completed by Engür (2011). The instrument is composed of 11 items and encompasses two sub-dimensions: "Motivational Function (MF)" and "Cognitive Function (CF)". The questionnaire is a five-point scale, scored as (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always. The Cronbach alpha (α) coefficient for the 'motivational function' sub-dimension of the Self-Talk Questionnaire is reported to be 0.94, while the coefficient for the 'cognitive function' sub-dimension is 0.87 (Engür, 2011). In this study, these coefficients ranged between 0.79 and 0.90.

Athlete Engagement Questionnaire: The Athlete Engagement Questionnaire was developed by Lonsdale et al., (2007a). The Turkish adaptation study was conducted by Kelecek et al. (2018). When examining the Athlete Engagement Questionnaire, it is observed that it consists of four sub-dimensions and 16 items. The scale includes the sub-dimensions of "Trust (T)", "Dedication (D)", "Vigour (V)" and "Enthusiasm (E)", each of which consists of four items. It is structured as a five-point Likert scale, rated as follows: (1) almost never, (2) rarely, (3) sometimes, (4) often, and (5) almost always. It is assumed that as the scores on the Athlete Engagement Questionnaire increase, so does the concept of engagement. The scale does not contain any reverse items. In the study by Lonsdale et al. (2007a), the Cronbach alpha (α) results for the sub-dimensions of the scale ranged from 0.62 to 0.99 (Lonsdale et al., 2007a). In the Turkish adaptation study by Kelecek et al. (2018), these coefficients were found to range from 0.75 to 0.92 (Kelecek et al., 2018). In this study, the Cronbach alpha (α) values for the sub-dimensions ranged from 0.79 to 0.91.

Data analysis

The data collected from the athletes were analysed by examining their frequencies, arithmetic means, standard deviations, t-tests, ANOVA analyses, and Pearson correlation coefficients. A decision regarding parametric and non-parametric conditions was made based on skewness and kurtosis values (Büyüköztürk, 2014). The skewness and kurtosis results of all sub-dimensions of the scales used in the study were examined and showed that all values fell within the ±3 range. The athlete engagement questionnaire had a skewness-kurtosis of 1.349-2.785, the sport imagery inventory had a skewness-kurtosis of 0.960-0.484, and the self-talk questionnaire had a skewness-kurtosis of 1.556-2.835. Skewness and kurtosis values within this range indicated that a univariate normal distribution was achieved in the data (Alpar, 2001; Kalaycı, 2008). In addition, the Kolmogorov–Smirnov test was applied to examine the normality of the score distributions, and the results indicated that the data did not significantly deviate from normality ($p>.05$). Therefore, parametric statistical procedures were employed in the analysis. The data were analysed using the IBM SPSS 23 software package, with a type I error rate of 5%. In addition to statistical significance, effect sizes were also calculated and reported. Cohen's d was calculated for the t-test, while partial eta-squared (ηp^2) was calculated for the ANOVA analysis.

RESULTS

This section presents findings on the demographic characteristics of the athletes participating in the study, along with the mean scores and subscale scores for imagery, self-talk, and athlete commitment. The findings presented were evaluated using t-tests, ANOVA, and correlation analyses to assess differences in the concepts examined in relation to the athletes' demographic characteristics and to evaluate the relationships between the concepts.

Tablo 1. Results of t-test for sport imagery and İts sub-dimensions, athlete engagement and self talk mean scores according to athletes' gender

Variable	Gender	n	X̄	ss	sd	t	p	Cohen's d
Cognitive Imagery	Female	186	5.04	1.15	318.93	3.45	0.001	0.38
	Male	136	5.44	0.89				
Motivational Specific Imagery	Female	186	5.36	1.41	320	2.05	0.040	0.23
	Male	136	5.68	1.27				
Motivational General Arousal	Female	186	5.17	1.40	320	0.20	0.841	0.02
	Male	136	5.14	1.39				
Motivational General Mastery	Female	186	5.42	1.33	311.20	2.74	0.006	0.31
	Male	136	5.81	1.15				
Sport Imagery	Female	186	5.20	1.09	320	2.49	0.013	0.28
	Male	136	5.49	0.95				
Athlete Engagement	Female	186	4.10	0.58	320	0.17	0.861	0.01
	Male	136	4.11	0.54				
Self-Talk	Female	186	3.94	0.80	320	0.53	0.596	0.06
	Male	136	3.89	0.84				

n=Number of Participants, X=Mean, ss=Standard Deviation, sd=Degrees of Freedom, t=Type of Analysis, p=Significance Level p<0.05.

In Table 1, the average scores of the athletes' gender variable in relation to "Athlete Engagement", "Sport Imagery", and "Self-Talk" levels are examined. It is observed that there is a statistically significant difference in the levels of "Sport Imagery" and its sub-dimensions: "Cognitive Imagery", "Motivational Specific Imagery", and "Motivational General Mastery" ($p<0.05$). However, no statistical difference was found between athletes' levels of Engagement and Self-Talk and their respective sub-dimensions ($p>0.05$). The effect sizes of these differences are considered small according to Cohen's d values. This indicates that the observed differences are limited in practical terms but still noteworthy (Cohen, 1988).

Table 2. Results of t-test for athlete engagement, sport imagery, and self-talk mean scores by athletes' branch

Variable	Sport Branch	n	X̄	ss	sd	t	p	Cohen's d
Athlete Engagement	Team	184	4.16	0.50	320	1.91	0.057	0.21
	Individual	138	4.04	0.63				
Sport Imagery	Team	184	5.27	1.06	320	0.95	0.341	0.10
	Individual	138	5.38	1.03				
Self-Talk	Team	184	3.85	0.91	320	1.90	*0.047*	0.22
	Individual	138	4.02	0.65				

n=Number of Participants, X=Mean, ss=Standard Deviation, sd=Degrees of Freedom, t=Type of Analysis, p=Significance Level p<0.05.

When the mean scores for the variables of "Athlete Engagement," "Sport Imagery," and "Self-Talk" levels of the athletes presented in Table 2 are examined, a statistically significant difference is observed in self-talk levels ($p<0.05$). However, no significant statistical difference was found between athlete engagement and sport imagery levels ($p>0.05$). When looking at self-talk scores, it is also seen that athletes involved in individual sports have higher average scores. The effect sizes of these differences are considered small according to Cohen's d values. This indicates that the observed differences are limited in practical terms but still noteworthy (Cohen, 1988).

Table 3. ANOVA results for athlete engagement, sport imagery and self-talk mean scores by athlete sport background

Variable	Athletic Background	n	X̄	ss	sd	F	p	ηp²	Tukey
Athlete Engagement	0-12 Month (1)	36	4.12	0.41	5	5.92	0.000	0.08	2-5; 2-6
	1-2 Year (2)	59	3.91	0.61					3-6
	3-4 Year (3)	67	4.07	0.49					4-6
	5-6 Year (4)	63	3.98	0.66					5-1
	7-8 Year (5)	46	4.24	0.54					6-2; 6-3
	9 Years + (6)	51	4.41	0.42					6-4
Sport Imagery	0-12 Month (1)	36	5.10	1.10	5	4.73	0.000	0.07	2-4; 2-5
	1-2 Year (2)	59	4.86	1.15					2-6
	3-4 Year (3)	67	5.30	1.09					4-2
	5-6 Year (4)	63	5.40	0.91					5-2
	7-8 Year (5)	46	5.63	0.96					6-2
	9 Years + (6)	51	5.65	0.86					
Self-Talk	0-12 Month (1)	36	3.79	0.88	5	1.37	0.234	0.02	
	1-2 Year (2)	59	3.73	0.91					
	3-4 Year (3)	67	3.98	0.78					
	5-6 Year (4)	63	3.94	0.78					
	7-8 Year (5)	46	3.97	0.89					
	9 Years + (6)	51	4.09	0.62					

n=Number of Participants, X=Mean, ss=Standard Deviation, sd=Degrees of Freedom, F=Type of Analysis, p=Significance Level p<0.05.

Table 3 shows the athletes' average scores for "Athlete Engagement," "Sports Imagery," and "Self-Talk" according to the "Athletic Background" variable. The results show a statistically significant difference in the levels of "Athlete Engagement" and "Sports Imagery" ($p < 0.05$). However, in order to see which group the difference originated from, a Tukey Test was performed, and it was seen that it originated from athletes with 9 years or more of athletic background in terms of athlete engagement and imagery levels. In addition to this finding, athletes with five or more years of athletic bakground showed higher averages in the "Athlete Engagement," "Sports Imagery," and "Self-Talk" categories. The effect sizes of these differences are supported by moderate partial eta-squared (ηp^2) values, indicating that the athletes' background has a meaningful and practically significant effect on the variables in question (Cohen, 1988).

Table 4. Pearson correlation coefficients results regarding athletes' levels and subdimensions of "athlete engagement", "sport imagery", and "self-talk"

Variables	T	D	V	E	AE	CI	MSI	MGA	MGM	SI	MF	CF
Trust	1	.	.	.	.	.	.	.	.	.	.	.
Dedication	.556**	1	.	.	.	.	.	.	.	.	.	.
Vigour	.481**	.510**	1	.	.	.	.	.	.	.	.	.
Enthusiasm	.407**	.487**	.653**	1	.	.	.	.	.	.	.	.
Athlete Engagement	.761**	.805**	.826**	.800**	1	.	.	.	.	.	.	.
Cognitive Imagery	.423**	.421**	.349**	.351**	.484**	1	.	.	.	.	.	.
Motivational Specific Imagery	.387**	.454**	.296**	.291**	.448**	.679**	1	.	.	.	.	.
Motivational General Arousal	.177**	.272**	.245**	.239**	.293**	.523**	.563**	1	.	.	.	.
Motivational General Mastery	.400**	.410**	.401**	.407**	.507**	.726**	.701**	.539**	1	.	.	.
Sport Imagery	.419**	.464**	.375**	.374**	.512**	.905**	.870**	.749**	.844**	1	.	.
Motivational Function	.175**	.300**	.259**	.245**	.308**	.494**	.440**	.389**	.515**	.539**	1	.
Cognitive Function	.222**	.321**	.235**	.220**	.314**	.523**	.466**	.391**	.523**	.562**	.756**	1
Self-Talk	.204**	.327**	.266**	.250**	.328**	.536**	.477**	.414**	.550**	.582**	.966**	.899**

p<0.05 (2-tailed)p<0.01 (2-tailed); n=322*

Table 4 presents the results of the correlation analysis conducted on the relationship between the sub-dimensions and total scores of "Athlete Engagement", "Sport Imagery" and "Self-Talk" among the participating athletes. In this context, a positive, low-to-moderate relationship is observed between the athletes' levels of engagement and their levels of sport imagery and self-talk. Similarly, a positive, low-to-moderate relationship was identified between the levels of sport imagery and self-talk.

DISCUSSION

This study investigates the association between the concept of athlete engagement and related constructs, sport imagery, and self-talk, and their potential impact on athletic performance, with a view to establishing whether these factors may exert a positive or negative influence. Furthermore, the study considers the influence of additional variables, including gender, sport type, athletic background and possession of an athlete licence, on these concepts.

Upon analysis of the levels of athlete engagement, sport imagery, and self-talk with respect to the gender variable (see Table 1), it was determined that a statistically significant difference emerged solely in sport imagery levels and their sub-dimensions of “Cognitive Imagery (CI)”, “Motivational Specific Imagery (MSI)”, and “Motivational General Arousal (MGA)” ($p<0.05$). No significant differences were identified between the levels of athlete engagement, self-talk, and their sub-dimensions ($p>0.05$). Additionally, it is observed that male athletes exhibit higher average scores in sport imagery compared to their female counterparts. In regard to the variable of gender, a review of the literature on imagery in sports reveals studies that are in alignment with our findings, as evidenced by the following references: (Gökalp & Tepeköylü Öztürk, 2022; Çiftçi & Yılmaz, 2024; Kızıldağ, 2007; Yarayan & Ayan, 2018). Conversely, there are also studies that do not corroborate our findings (Kartal et al., 2017; Bayköse, 2014). It is hypothesised that the observed differences may be influenced by factors such as the profile associated with the concept of gender in the environment, guidance from families, or an individual's physical predisposition.

The study revealed that, when analysing the levels of athlete engagement, sport imagery, and self-talk concerning the variable of sport type (see Table 2), a statistically significant difference was identified only in self-talk levels ($p < 0.05$). In contrast, no significant differences were detected in athlete engagement or sport imagery levels with respect to sport type ($p>0.05$). Furthermore, athletes engaged in individual sports exhibit higher mean scores for self-talk compared to their counterparts in team sports. A review of the literature on self-talk reveals studies that are consistent with our findings, as evidenced by references (Gülşen, 2016; Hardy et al., 2005). However, there are also studies that do not corroborate these findings (Çiftçi et al., 2021; Akılveren, 2017). It is hypothesised that the observed differences may be attributed to the fact that athletes engaged in individual sports are continuously challenging themselves during training or competitions, and providing themselves with positive internal encouragement to improve throughout this process.

The analysis presented in Table 3 showed a statistically significant difference in athlete engagement and sport imagery levels ($p<0.05$). However, no significant difference was found in self-talk levels according to athletic experience ($p>0.05$). Furthermore, athletes with a minimum of five years' experience demonstrate higher mean scores for athlete engagement, sport imagery and self-talk. A review of the literature on athletic experience reveals studies that align with our findings regarding athlete engagement and sport imagery. For example, Demirdöken et al., (2019) and Sivrikaya & Biricik (2019) studies, as well as Yarayan & Ayan (2018), Çil & Kayışoğlu (2022) studies, support our conclusions on these two variables. Conversely, there are also studies that do not corroborate our findings (Doğan, 2019; Luzio et al., 2019). It is proposed that the observed differences may be attributed to athletes reporting a heightened sense of engagement to their sport as their athletic experience increases, which in turn leads to an engagement in more imagery as a consequence of that engagement

In our study, an examination of the overall and sub-dimensional relationships among the concepts of athlete engagement, sport imagery, and self-talk (see Table 4) revealed a moderate positive correlation between athlete engagement and the sub-dimension of "Trust" with the sub-dimensions of (CI), (MSI), (MGI), and the total score of "Sport Imagery". Furthermore, a weak positive correlation was identified between the “MGI”, “MI”, “CI”, and the total score of self-talk. Additionally, a moderate positive association was identified between athlete engagement and the sub-dimension of "Dedication" with "CI," "MSI," "MGI," "MI," and the total scores of "sport imagery" and "Self-Talk.". Moreover, a weak positive correlation was detected with the "MGI" sub-dimension. For the sub-dimension of “Vigor”, a moderate positive correlation was identified with the “CI”, “MGI” sub-dimension, and the total score of sport imagery. Conversely, a weak positive correlation was found between the “MSI”, “MGI”, “MI”, and “CI” sub-dimensions and the total score of Self-Talk. Similarly, the sub-dimension of enthusiasm demonstrated a moderate positive correlation with the “CI”, “MGI” sub-dimension and the total score of sport imagery. Conversely, a weak positive correlation was observed between the “MSI”, “MGI”,

"MI" and "CI" sub-dimensions and the total score of Self-Talk. Moreover, a moderate positive correlation was found between the total athlete engagement score and the "CI," "MSI," "MGI," "MI," and "CI" sub-dimensions, as well as the total scores of "Sport Imagery" and "Self-Talk." Conversely, a weak positive correlation was identified with the "MGI" sub-dimension. Upon examination of the relationship between sport imagery and its sub-dimensions with self-talk levels and their sub-dimensions, a moderate positive correlation was identified between the "Cognitive Imagery" sub-dimension of sport imagery and the "MI," "CI" sub-dimensions, and the total score of "Self-Talk." Similarly, moderate positive correlations were observed between sport imagery and the "Motivational Specific Imagery" sub-dimension with the "MI," "CI" sub-dimensions and the total score of "Self-Talk." Furthermore, moderate positive correlations were identified between sport imagery and the "Motivational General Arousal" sub-dimension with the "MI," "CI" sub-dimensions and the total score of "Self-Talk," as well as with the "Motivational General Mastery" sub-dimension and the "MI," "CI" sub-dimensions and the total score of "Self-Talk." Finally, a moderate positive correlation was observed between the total score of sport imagery and the "MI," "CI" sub-dimensions and the total score of "Self-Talk." In light of these findings, it can be posited that all concepts and sub-dimensions included in our research are significantly positively correlated at moderate and weak levels. Furthermore, it can be inferred that athletes with high levels of engagement engage more frequently in imagery and self-talk. Similarly, athletes with high levels of sport imagery also tend to engage more frequently in self-talk.

CONCLUSION

In conclusion, it has been observed that the variables of gender, sport type, and athletic background of the athletes participating in the study can exert a positive or negative influence on their levels of athlete engagement, sport imagery, and self-talk, as well as their performance. Moreover, it has been demonstrated that the concepts of athlete engagement, sport imagery, and self-talk, which are believed to have a profound impact on athletes, are positively correlated. As the level of athlete engagement increases, so do the levels of imagery and self-talk. Similarly, a rise in imagery levels is associated with a corresponding increase in self-talk levels.

SUGGESTIONS

In light of these findings, it is proposed that consideration of the impact of athlete engagement, sport imagery, and self-talk on performance will prove beneficial for athletes in their ongoing athletic careers. Furthermore, it is recommended that training and competition continue in accordance with these concepts, as this will be advantageous. To underscore the potential advantages that athletes may derive from these concepts, it is recommended that meetings and training sessions be convened with a specific focus on these topics. Furthermore, it is recommended that the relationships between the aforementioned concepts and other factors that may positively influence performance be investigated across different age categories, sports, or variables such as amateur and professional status.

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Ethical Approval and Permission Information

Ethics Committee:	Ankara Yıldırım Beyazıt Üniversitesi Rektörlüğü Sağlık Bilimleri Etik Kurulu
Protocol/Number:	06/781

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