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Examination of the Relationship Between Irrational Performance Beliefs and Levels of Anxiety of Elite Athletes in Sports

Elit Sporcuların Akıl Dışı Performans İnançları ile Sporda Kaygı Seviyeleri Arasındaki İlişkilerin İncelenmesi

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ABSTRACT

The aim of this study is to examine the relationship between irrational performance beliefs and anxiety levels in elite athletes. The research was conducted with the voluntary participation of 285 male and female elite athletes between the ages of 15 and 55, During the research process, athletes' irrational performance beliefs and anxiety levels in sports were investigated. For this purpose, the Irrational Performance Beliefs inventory-2 and the Sport Anxiety Scale-2 were used. Athletes' anxiety levels and irrational performance beliefs were examined considering gender and sport type variables. One-way ANOVA test was used for comparative analysis, and Pearson Correlation analysis was employed for relational examinations. The findings revealed that female athletes were more anxious. Furthermore, in the examination conducted based on sports disciplines, it was found that the differences between athletes' anxiety levels and irrational performance beliefs varied depending on the sport type. In the overall examination, significant relationships were found between athletes' anxiety levels and irrational performance beliefs. In conclusion, athletes' anxiety levels affect their irrational performance beliefs, and this relationship differs among genders and sports disciplines.

Keywords: Anxiety Levels in Sports, Elite Athletes, Irrational Performance Beliefs

ÖZ

Bu çalışmanın amacı, elit sporcuların akıldışı performans inançları ile kaygı düzeyleri arasındaki ilişkiyi incelemektir. Araştırma, yaşları 15 ile 55 arasında değişen 285 erkek ve kadın elit sporcunun gönüllü katılımıyla gerçekleştirilmiştir. Araştırma sürecinde sporcuların sporda akıldışı performans inançları ve kaygı düzeyleri incelenmiştir. Bu amaçla Akıldışı Performans İnançları Envanteri-2 ve Sporda Kaygı Ölçeği-2 kullanılmıştır. Sporcuların kaygı düzeyleri ve akıldışı performans inançları, cinsiyet ve spor türü değişkenleri dikkate alınarak incelenmiştir. Karşılaştırmalı analizler için tek yönlü ANOVA testi, ilişkisel incelemeler için ise Pearson Korelasyon analizi kullanılmıştır. Bulgular, kadın sporcuların daha kaygılı olduğunu ortaya koymuştur. Ayrıca, spor disiplinlerine göre yapılan incelemede, sporcuların kaygı düzeyleri ile akıldışı performans inançları arasındaki farklılıkların spor türüne bağlı olarak değiştiği bulunmuştur. Genel incelemede, sporcuların kaygı düzeyleri ile akıldışı performans inançları arasında anlamlı ilişkiler bulunmuştur. Sonuç olarak, sporcuların kaygı düzeyleri akıldışı performans inançlarını etkilemekte ve bu ilişki cinsiyetler ve spor disiplinleri arasında farklılık göstermektedir.

Anahtar Kelimeler: Akıldışı Performans İnançları, Elit Sporcular, Sporda Kaygı Seviyesi

The study was approved by the University Clinical Research Ethics Committee (No: 2023-111/O.U).

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INTRODUCTION

The performance characteristics of elite athletes differ from those of sub-elite athletes, and their primary goal is to achieve excellence.[1,2] In line with this goal, their efforts to maximize their kinematic performance, along with the desire to control their competition-based psychological characteristics, play a significant role in sport and exercise psychology.[3,4]

Competitions among athletes who possess flawless techniques and demonstrate high-level sports performance are essentially psychological competitions, and those athletes and coaches who recognize and apply this fundamental principle can be successful.[5,6] Goal setting, coping with challenges, managing stress and anxiety levels, regulating arousal, positive thinking, self-regulation, internal positive self-talk, and emotion regulation are the expected skills for athletes in their preparation process for competitions.[7] Psychological skills act as a bridge between athletes' potentials and their sports performance. The more athletes develop their psychological skills that can contribute positively to their sports performance, the more they can enhance their potential. However, it is important to note that athletes' psychological skills can be strongly influenced by negative experiences such as fear, worry, anxiety, and stress.[8–10] Additionally, factors such as the desire of athletes to perform at a high level, the pressure of being liked by coaches and the environment, the influence of spectators, and material expectations are among the significant factors that affect athletes in the sports environment.[11] Along with irrational beliefs, athletes can display dysfunctional emotions and maladaptive behaviors.[12]

Fundamentally, rational beliefs about negative events (e.g., failure, mistreatment, rejection) trigger adaptable emotional and behavioral responses to these adversities and are considered "protective factors".[13] The concept of "irrationality" refers to thoughts that are not consistent with reality in an experimental sense.[14] Ellis addressed irrational beliefs under four subheadings: primary irrational beliefs, catastrophic scenarios, low tolerance for frustration, and self-deprecation.[14] Furthermore, the basis of irrational beliefs often involves the continuous use of exaggerated statements.[15] According to rational emotive behavior theory, what bothers people are not the events themselves but the unrealistic thoughts about these events. Athletes have a strong biological inclination to adopt irrational beliefs that can lead to self-defeating beliefs.[16] These dogmatic thoughts reveal irrational beliefs developed as people approach events.[13,17] Irrational beliefs have negative effects on athletes' mental processes, hinder their goal attainment, increase sports anxiety, and can lead to failure in competition.[16,18]

Anxiety, a significant psychological state that affects athletic performance, needs to be controlled by athletes to facilitate their goal attainment in sports.[19,20] In sports, anxiety is defined as a characteristic or state-like response to a sports-related stressful situation that an individual perceives as potentially stressful, resulting in a series of cognitive evaluations, behavioral responses, and/or physiological arousal.[19,21,22] Competitive anxiety, in the context of sports participation, refers to the tendency to perceive competitive situations as threatening and respond to these situations with feelings of worry and tension.[20] Anxiety symptoms are associated with the stress created by sports participation. Stress arises from the imbalance between perceived environmental demands and the perceived coping capacity of the athlete.[20] Anxiety is the experience of an individual having an apprehensive expectation or fear regarding an upcoming potentially dangerous event.[23] Anxiety is often accompanied by unpleasant feelings, stress or tension, and somatic symptoms and signs.[24] When focusing on athletes' anxiety levels in the context of competition, their ability to direct their cognitive processes, the levels of anxiety they may experience, and their emotional beliefs about this become important.[25] Athletes' awareness of their mental abilities and emotions, their levels of consciousness, and

subjective evaluations about this can have an impact on their sports performance. Irrational beliefs can make athletes feel mentally, physically, and functionally weak, increasing sports anxiety and leading to performance failure in competitions.[12,13,26]

The obtained results indicate that psychological traits, especially irrational beliefs, can adversely affect athletic performance. However, in the conducted examination, it was noted that these traits, along with gender and differences in sporting disciplines, have not yet been thoroughly investigated and remain an open area for research. Therefore, in this study, the aim was to explore the relationship between elite athletes' irrational performance beliefs and their anxiety levels within sporting environments.

MATERIALS AND METHODS

Participants

The sample size for the study was determined using G*Power (version 3,1,9,7, Germany) power analysis (d=0,5; α=0,05). The study was conducted with the voluntary participation of a total of 285 male (age: 24,10±8,35 yrs., experience: 9,09±6,05 yrs., number of workouts per week: 4,62±1,48 pcs.) and female (age: 22,09±7,30 yrs., experience: 7,17±4,72 yrs., number of workouts per week: 4,72±3,86 pcs.) athletes. The inclusion criteria for participation in the study were that the athletes had been actively engaged in sports for at least 1 year and held a valid sports license, actively participating in national or international competitions, which classified them as elite athletes. The athletes ranged in age from 15 to 55 and resided in 40 different cities. Two of these cities were located abroad, while the remaining 38 were in Türkiye.

Ethical Aspects of Research

All athletes were informed about the study and provided with explanations regarding the potential benefits and risks. After the briefing, a written informed consent form, prepared according to the Helsinki Declaration, was electronically sent to all athletes. The study was conducted in accordance with the ethical principles of the European Convention and the Helsinki Declaration and was approved by the University's Social and Human Sciences Ethics Committee (No: 2023-111). [27]

Procedures

In the research process, surveys and scales were used for data collection purposes. Specifically, the Irrational Performance Beliefs inventory-2 (IPBI-2) and the Sport Anxiety Scale-2 (SAS-2), with permission obtained from the developers, were used in this study. The accessibility of the relevant scales' articles from online databases was determined.[28,29] After obtaining permission to use the scales, necessary approvals were obtained from scientific and ethical committees. For data collection, an online platform, Google Forms, was used, and athletes were provided with survey links for access. The research data was collected solely online. The surveys and scales were administered to elite athletes at their convenience, and participation was entirely voluntary. Before administering the scales, athletes were provided with detailed information about the content of the survey, the process of completing the scales, and the significance of the research. Additionally, the participants were assured that their data would be kept confidential and their information would be protected.

To gather demographic information of the participating elite athletes, a personal information form developed by the researchers was utilized. This form included information such as participants' age, gender, the specific sport they were actively involved in, the duration of their engagement in that sport, the number of days per week they engaged in sports, their city of residence, their expectations related to sports, and their motivations for participating in that particular sport.

Irrational Performance Beliefs inventory-2 (IPBI-2): This scale is used to assess irrational

beliefs related to performance.[30] The IPBI-2 consists of a total of 20 items and is a 5-point Likert-type scale. It includes four dimensions: primary irrational beliefs (PIB), awfulizing (AWF), low frustration tolerance (LFT), and depreciation (DEP). The reliability of the scale was evaluated using Cronbach's alpha coefficient. The reliability coefficients were found to be 0,76 for the PIB, 0,85 for the LFT, 0,79 for the AWF, and 0,87 for the DEP. Confirmatory factor analysis results for the validity of the scale indicate that it is within acceptable limits ($\chi 2$ /df = 3,90, CFI = 0,91, NNFI = 0,90, RMSEA = 0,07).[30] The Turkish adaptation of the scale was conducted by Urfa and Aşçı, and the results of the analyses supported the original four-factor structure of the Turkish version of the scale.[29]

Sport Anxiety Scale-2 (SAS-2): The SAS, developed by Smith et al. in 1990 and later revised in 2006, consists of 15 items and three subscales: somatic anxiety, worry, and concentration. The scale is a 4-point Likert-type scale.[31,32] In the Turkish validation study, the factor loadings of the items ranged from 0,42 to 0,75, and the Cronbach's alpha coefficients were found to be 0,65 for somatic anxiety, 0,78 for worry, and 0,67 for concentration.[28] The Turkish validation study was conducted by Karadağ and Aşçı (2020), and according to the results of confirmatory factor analysis, the factor loadings of the items in the scale ranged from 0,71 to 0,90, and the model exhibited good fit indices ($\chi 2$ /df = 1,57; RMSEA = 0,06; IFI = 0,98; GFI = 0,91; CFI = 0,98; TLI = 0,97).[28] Additionally, the calculated MSV, ASV, and AVE values supported the convergent and discriminant validity of the scale, while the Cronbach's alpha and CR coefficients supported the reliability of the scale. The findings indicate that SAS-2 meets the validity and reliability criteria for assessing multidimensional anxiety in adolescent athletes.[28]

Analyses

The statistical analyses were conducted using SPSS (version 25, Chicago, IL). The results are presented as mean values ± standard deviation (X±SD). Data normality was assessed through the Q-Q plot, and variance equality was examined using the Levene's test. The irrational performance beliefs and anxiety levels of athletes were compared between genders and sports disciplines, and differences were analyzed using One-Way Analysis of Variance (ANOVA). Post-hoc comparisons were performed using the Tukey test. All statistical results were considered significant at a probability level of $p<0,05$. Effect sizes (Cohen's d) were examined to determine the magnitude of the differences between variables. The threshold values for Cohen's d statistics are 0,20 for small effect, 0,60 for medium effect, 1,20 for large effect, 2,0 for very large effect, and 4,0 for extremely large effect.[33] Subsequently, the relationships between irrational performance beliefs and anxiety levels in sports were analyzed using Pearson correlation analysis. Correlation coefficients under 0,30 were considered weak, coefficients between 0,30 and 0,5 were considered moderate, coefficients between 0,6 and 0,8 were considered high, and coefficients between 0,8 and 1,0 were considered excellent correlations.[34] The significance level was set at $p\leq0,05$.

RESULTS AND DISCUSSION

In the analysis conducted, it was found that the relationships between anxiety levels (Somatic 2,00±0,77; Worry 2,23±0,86; Concentration 1,87±0,70) and irrational performance beliefs (PIB 3,57±0,89; AWF 3,18±0,94; LFT 3,71±0,93; DEP 2,75±0,89) in sports were low to moderate and positively significant across all sub-dimensions ($r=0,132$-$0,389$; $p<0,05$) (Figure 1).

After examining and analyzing the details of irrational performance beliefs and anxiety levels for all athletes, the results were further examined based on the gender factor. The findings revealed no significant difference between male and female athletes in their responses to the irrational performance beliefs scale ($p>0,05$). However, there were significant differences in the responses of male and female athletes in the anxiety scale

scores (p<0,05). The results indicated that female athletes had higher levels of somatic anxiety (d=0,51; p=0,000), worry (d=0,54; p=0,000), and concentration (d=0,27; p=0,026) compared to male athletes.

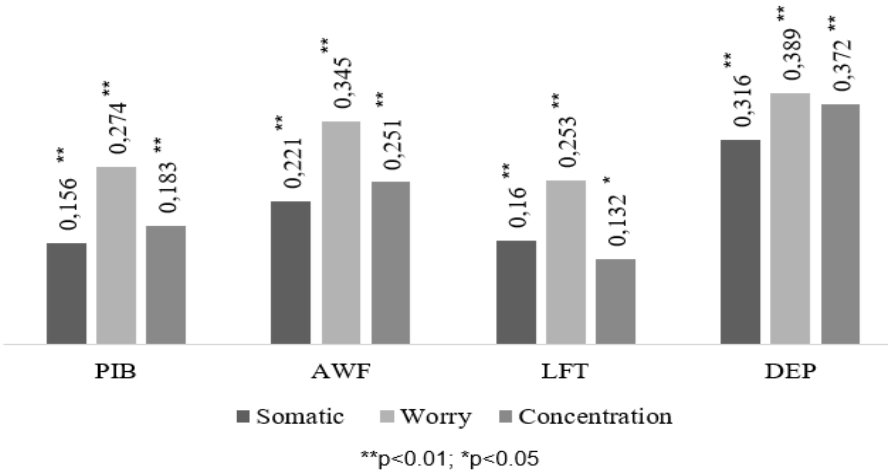

Figure 1. Relationships Between Irrational Performance Beliefs and Anxiety Levels in Sports

When examining the relationships between irrational performance beliefs (PIB_{male} 3,54±0,9; PIB_{female} 3,62±0,87; AWF_{male} 3,22±0,95; AWF_{female} 3,12±0,92; LFT_{male} 3,68±0,94; LFT_{female} 3,78±0,92; DEP_{male} 2,77±0,89; DEP_{female} 2,72±0,9) and anxiety levels ($Somatic_{male}$ 1,86±0,72; $Somatic_{female}$ 2,25±0,8; $Worry_{male}$ 2,07±0,82; $Worry_{male}$ 2,52±0,86; $Concentration_{male}$ 1,8±0,69; $Concentration_{feale}$ 1,99±0,69) in athletes based on the gender variable, it was found that the relationships between somatic anxiety and PIB in male athletes were not significant (p>0,05). However, in male athletes, there were low to moderate significant correlations between somatic anxiety, worry, and concentration levels, and PIB, AWF, LFT, and DEP (r=0,157-0,379; p<0,05). For female athletes, it was observed that there were low to moderate significant positive correlations between somatic anxiety and AWF and DEP, worry and PIB, AWF, and DEP, and concentration and AWF and DEP levels (r=0,269-0,463; p<0,05). The relationships between other variables were not significant (p>0,05) (Figure 2).

When examining the irrational performance beliefs of athletes based on the sport discipline, it was found that there were significant differences in PIB between judo and orienteering athletes (d=0,83; p=0,017). Significant differences were also observed in AWF between football and orienteering (d=1,52; p=0,018), wrestling and orienteering (d=1,71; p=0,023), and judo and orienteering (d=1,37; p=0,032) athletes. Similarly, in the DEP, significant differences were found between football and orienteering (d=1,38; p=0,042), wrestling and orienteering (d=1,72; p=0,045), and judo and orienteering (d=1,56; p=0,017) athletes. No significant differences were found in PIB, AWF, and DEP subscales between other sport disciplines (p>0,05). Additionally, it was determined that all athletes were at a similar level in the LFT subscale (p>0,05) (Table 1).

When examining the differences in anxiety levels among athletes based on the sport discipline, significant differences were found in the somatic anxiety subscale between handball and wrestling (d=1,40; p=0,045) as well as handball and taekwondo (d=1,50; p=0,025) athletes. In the worry subscale, significant differences were found between taekwondo and handball (d=1,44; p=0,008), orienteering and taekwondo (d=1,69; p=0,007), and judo and orienteering (d=1,78; p=0,048) athletes. No significant differences were found in the somatic anxiety and worry subscales between other sport disciplines (p>0,05). Additionally, it was determined that all athletes had similar levels of cognitive anxiety (p>0,05) (Table 2).

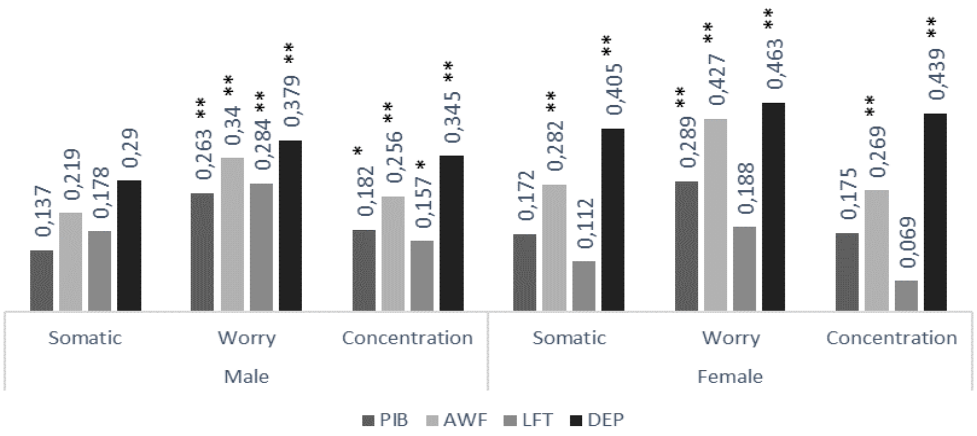

Figure 2. The Relationships Between Irrational Performance Beliefs and Anxiety Levels

When examining the relationships between athletes' irrational performance beliefs and anxiety levels based on sport discipline, significant correlations were found in certain sports. The results indicated that there was a moderate positive correlation between concentration and AWF in athletics (r=0,543; p<0,05). In badminton, there were moderate to high positive correlations between somatic anxiety and DEP (r=0,595; p<0,01), worry and AWF (r=0,492; p<0,05), and worry and DEP (r=0,637; p<0,01), as well as moderate to high positive correlations between concentration and AWF (r=0,624; p<0,01) and DEP (r=0,748; p<0,01). In skiing, there were positive moderate correlations between concentration and AWF (r=0,499; p<0,05) and DEP (r=0,521; p<0,05).

Table 1. The Differences in Irrational Performance Beliefs Among Athletes Based on The Sport Discipline

	n	PIB p=0,041	AWF p=0,020	LFT p=0,230	DEP p=0,001
Shooting	9	3,51±1,06	2,84±1,09	3,56±1,15	2,13±0,99
Track and field	7	3,79±0,9	3,05±0,8	4,22±0,79	2,85±0,94
Badminton	0	3,4±0,81	3,06±0,82	3,72±0,84	3,05±0,8
Ski	6	3,66±0,66	3,31±0,7	3,54±0,92	2,94±0,73
Soccer	1	3,82±0,89	3,52±0,83[a]	3,65±0,9	3,05±0,86[a]
Wrestling	9	3,87±0,9	3,82±0,99[b]	4,11±0,78	3,33±0,86[c]
Handball	2	3,27±0,96	3,22±1,04	3,28±1,08	2,67±0,88
Judo	4	3,84±0,92[a]	3,63±1,16[c]	4,07±0,7	3,3±0,98[b]
Kickbox	8	3,34±1,09	3,16±1,01	3,53±1,27	2,78±0,99
Wushu/Muaythai	2	4,03±0,52	3,27±1,01	3,65±0,79	2,68±0,82
Orienteering	0	2,98±1,13[a]	2,24±0,85[abc]	3,26±0,97	1,94±0,75[abc]
Pilates/Fitness	1	2,98±0,79	2,71±0,85	3,78±0,96	2,4±0,89
Rafting	10	3,82±0,67	3,02±1,18	3,82±0,69	2,52±0,98
Taekwondo	13	3,26±1,04	2,75±1,03	3,29±1,13	2,54±0,95
Tennis	28	3,41±0,91	3,14±0,83	3,59±0,81	2,31±0,57
Volleyball	24	3,86±0,73	3,38±0,91	3,87±1,1	2,64±0,82
Swimming	27	3,55±0,7	3,2±0,82	3,9±0,73	2,94±0,88

[a, b, c]: *p<0,05; PIB: Primary irrational beliefs; AWF: Awfulizing; LFT: Low frustration tolerance; DEP: Depreciation*

Handball players showed high positive correlations between DEP and somatic anxiety (r=0,782; p<0,01), worry (r=0,714; p<0,01), and concentration (r=0,721; p<0,01). Similarly, judo athletes exhibited high positive correlations between DEP and somatic anxiety (r=0,685; p<0,01), worry (r=0,662; p<0,01), and concentration disruption (r=0,896; p<0,01). Additionally, judo players demonstrated moderate to high positive correlations between somatic anxiety and LFT (r=0,605; p<0,01), worry and AWF

(r=0,695; p<0,01) and LFT (r=0,701; p<0,01), and concentration and AWF (r=0,549; p<0,01). Only moderate correlations were found between somatic anxiety and PIB in wushu and muaythai athletes (r=0,590; p<0,05). Orienting and pilates-fitness athletes showed a high level of correlation between worry and DEP (r=0,714-0,727; p<0,01). Volleyball players had moderate to high significant correlations between somatic anxiety and PIB (r=0,601; p<0,01), AWF (r=0,476; p<0,05), LFT (r=0,450; p<0,05), and DEP (r=0,623; p<0,01). Moderate correlations were found between worry and PIB (r=0,576; p<0,01), AWF (r=0,486; p<0,05), and DEP (r=0,540; p<0,01). There was a moderate correlation between concentration and DEP in volleyball players (r=0,463; p<0,05). No significant relationships were found between anxiety levels and irrational performance beliefs in shooting, soccer, wrestling, kickboxing, rafting, taekwondo, tennis, and swimming athletes (p>0,05) (Figure 3).

Table 2. The Differences in Anxiety Levels Among Athletes Based on The Sport Discipline

	n	Somatic p=0,001	Worry p=0,002	Concentration p=0,206
Shooting	9	1,82±0,5	1,96±0,89	1,98±0,89
Track and field	7	1,95±0,65	2,21±0,72	1,81±0,54
Badminton	0	2,25±1,02	2,4±0,79	2,07±0,81
Ski	16	2,4±0,97	2,3±1,08	2,05±0,74
Soccer	31	1,83±0,63	2,24±0,77	1,86±0,6
Wrestling	9	**2,62±0,96**[a]	2,69±0,92	2,33±0,94
Handball	12	**1,47±0,66**[ab]	**1,6±0,79**[a]	1,45±0,8
Judo	14	2,11±0,86	**2,73±0,79**[c]	2,07±0,79
Kickbox	18	1,83±0,61	2,16±0,86	1,72±0,57
Wushu/Muaythai	12	1,9±0,59	2,2±0,8	1,77±0,37
Orienteering	10	1,56±0,74	**1,52±0,55**[bc]	1,44±0,69
Pilates/Fitness	11	1,96±0,75	1,85±0,74	1,82±0,68
Rafting	10	2,04±0,54	1,94±0,64	1,84±0,63
Taekwondo	13	**2,57±0,8**[b]	**2,94±1,05**[ab]	2,15±0,72
Tennis	28	1,81±0,6	2,15±0,68	1,9±0,62
Volleyball	24	1,74±0,55	2,11±0,89	1,7±0,58
Swimming	27	2,25±0,89	2,42±0,93	1,87±0,82

[a, b, c:] *p<0,05*

The findings demonstrated significant relationships between athletes' irrational performance beliefs and anxiety levels. Specifically, the sub-dimensions of irrational performance beliefs, including primary irrational beliefs, awfulizing, low frustration tolerance, and depreciation, were found to be associated with the sub-dimensions of anxiety, somatic symptoms, worry, and concentration. These results suggest a connection between these two variables that were the focus of the research. Similar studies conducted on a sample of German athletes have identified low positive relationships between irrational performance beliefs and psychological distress, as well as low negative relationships with well-being.[17] Another study has indicated that irrational beliefs may give rise to symptoms that can lead to anxiety and psychological distress.[35] Furthermore, a different study found that intolerance of uncertainty, as an anxiety-inducing thought, fully mediated the negative impact of irrational beliefs on mental health.[36] Researchers exploring this topic, such as Toth et al. (2022), have discovered that both irrational beliefs and perfectionism influence the emergence of competitive anxiety in Hungarian athletes.[37] They suggest that rational emotive behavior therapy focused on perfectionism could be an effective approach to reducing competitive anxiety in athletes.[37] Bahrami and Yousefi (2011) reported that irrational beliefs in Australian football players contribute to increased levels of anxiety, negatively affecting their athletic performance.[38] These studies support our findings by highlighting the potential of irrational performance beliefs to trigger negative emotions such as anxiety, which can have adverse effects on athletic performance.

In order to gain a more detailed understanding of the findings, the collected data were re-analyzed separately based on the variables of gender and sport discipline. When examining the statistical differences and relationships between athletes' irrational performance beliefs and sport anxiety levels according to gender, it was found that male and female athletes had similar levels of irrational performance beliefs, but significant differences existed in their anxiety levels, with female athletes exhibiting higher levels of anxiety. The similarity in irrational performance beliefs between genders may be attributed to the similar training and

preparation systems implemented for elite athletes regardless of gender. The analysis revealed significant relationships between male athletes' somatic anxiety levels and the sub-dimensions of awfulizing, low frustration tolerance, and depreciation. Additionally, the sub-dimensions of worry and concentration were found to be associated with all sub-dimensions of irrational performance beliefs. The analysis of female athletes indicated significant relationships between their somatic anxiety levels and the sub-dimensions of awfulizing and depreciation. Moreover, significant relationships were observed between their worry levels and the sub-dimensions of primary irrational beliefs, awfulizing, and depreciation. Similarly, concentration was associated with the sub-dimensions of awfulizing and depreciation. Prominent evidence suggests that women experience higher levels of fear and are more likely to develop anxiety disorders compared to men.[39,40] A study in this regard reported that irrational beliefs can contribute to psychological problems, and elite athletes exhibit lower levels of irrational beliefs compared to non-elite athletes, with female athletes reporting higher levels of depressive symptoms compared to males.[35] Differences in brain chemistry and hormonal fluctuations between males and females are believed to play a role in these differences.[40] These results indicate the need for different interventions for male and female elite athletes in order to maximize athletic performance, considering the structural differences in natural anxiety levels.

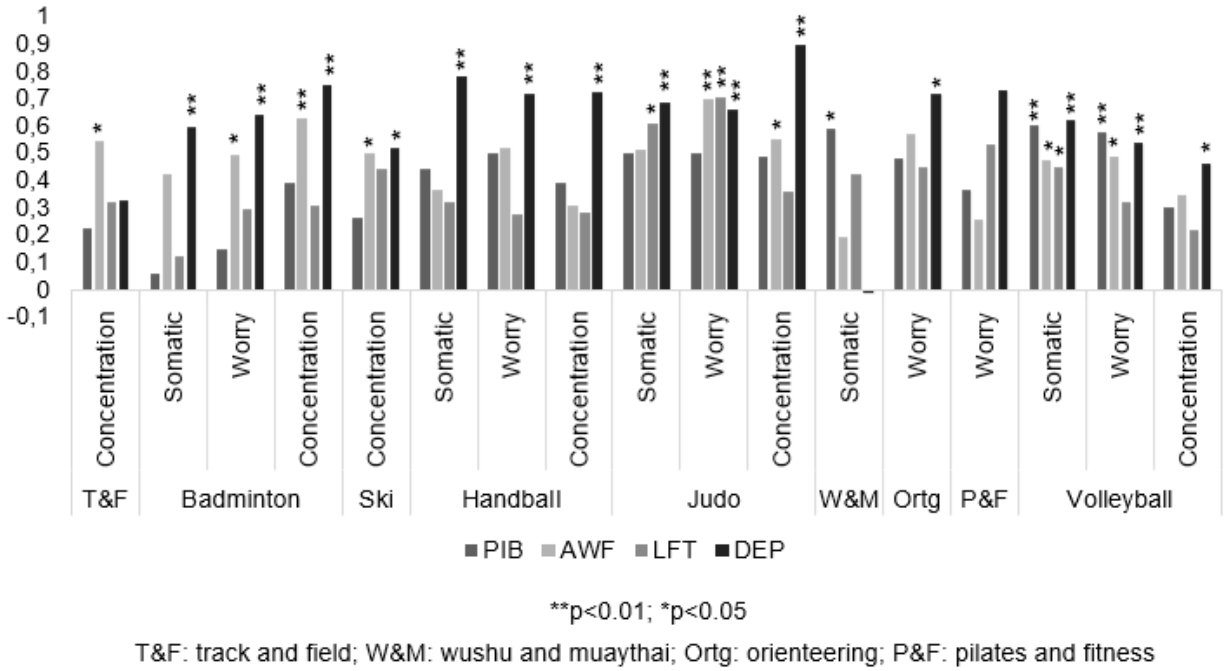

Figure 3. The Relationships Between Athletes' Irrational Performance Beliefs and Anxiety Levels Based on Sport Discipline

Upon examining the irrational performance beliefs and anxiety levels of athletes according to sport disciplines, it was found that some sports showed similarities while others exhibited differences. Specifically, significant differences were observed in the primary irrational beliefs dimension between judo and orienteering, the awfulizing dimension between orienteering and football, wrestling, and judo, and the depreciation dimension between orienteering and football, judo and orienteering, and judo and tennis. In terms of anxiety levels among athletes, significant differences were found in the somatic anxiety dimension between handball and wrestling, and taekwondo, the worry dimension between taekwondo and handball, orienteering and judo, orienteering and taekwondo, and taekwondo and handball. These differences may stem from factors such

as the Olympic status of the sports, variations between competitions, the purpose of engagement in the sport, or expectations from the sport. Therefore, studies focusing on athletes' psychological characteristics should emphasize the variable of sport discipline. Previous research has highlighted that sports have the potential to create high levels of stress and anxiety.[19] However, there is no consensus on whether anxiety levels vary according to the type of sport an athlete participates in. Nevertheless, a study conducted on this topic found significant differences between male and female athletes and between individual sports (athletics, climbing, orienteering, surfing, swimming, tennis) and team sports (basketball, handball, rugby, football, volleyball). Specifically, female athletes and those engaged in individual sports displayed higher levels of general sport anxiety.[42] Therefore, it is important for athletes to manage their anxiety levels appropriately in order to minimize negative effects on performance.[42]

Upon examining the relationships between athletes' anxiety levels and irrational performance beliefs according to the variable of sport discipline, significant findings were obtained. In athletics, significant relationships were found between concentration and awfulizing levels. Badminton players showed significant relationships between worry and concentration levels and awfulizing and depreciation levels. Additionally, significant relationships were found between somatic anxiety and depreciation levels among badminton players. Similarly, in skiing, significant relationships were observed between concentration levels and awfulizing and depreciation levels. In team sports, significant relationships were found between athletes' anxiety levels and irrational performance beliefs. Specifically, in volleyball, significant relationships were found between somatic anxiety levels and irrational performance beliefs. Moreover, volleyball players' worry scores showed significant relationships with primary irrational beliefs, awfulizing, and depreciation levels, while concentration showed a significant relationship with depreciation levels. in handball, another team sport, overall high-level significant relationships were observed between athletes' anxiety levels and the depreciation dimension. Team sports are characterized by continuous competition throughout the match, and it is expected that athletes will experience a certain level of anxiety. However, the results indicate that athletes' anxiety levels feed into irrational beliefs. Similar findings were observed in combat sports. Specifically, judo players showed significant relationships between somatic anxiety levels and low tolerance and depreciation levels, between worry levels and awfulizing, low tolerance, and depreciation levels, and between concentration levels and awfulizing and depreciation levels. Similarly, wushu/muaythai athletes showed significant relationships between somatic anxiety levels and primary irrational beliefs. Orienteering, pilates, and fitness athletes, who engage in non-contact physical combat, exhibited significant relationships between worry levels and depreciation levels. Overall, these findings suggest that the competitive nature of sports at various levels may contribute to anxiety, and in turn, anxiety may lead to irrational beliefs for various reasons.

This study has some limitations that need to be acknowledged. First, the data were collected using Likert-type scales, which may have limitations in capturing the complexity and nuances of athletes' experiences. To enhance the robustness of the research findings, qualitative studies are needed to provide a deeper understanding of the relationships between athletes' anxiety levels and irrational performance beliefs. Additionally, the anxiety levels of athletes were measured at the same time period in this study. Although participants were reminded to consider their levels during sporting activities, actual competition conditions could introduce variations. Some athletes were in the competition season while others were in the preseason preparation period during the study. To obtain more accurate results, data should be collected from all athletes during their respective competition periods.

CONCLUSION AND RECOMMENDATIONS

This study examined the relationships between athletes' anxiety levels and irrational performance beliefs, taking into account gender and sport type variables. in comparisons between genders, it was found that irrational performance levels were similar between female and male athletes. However, female athletes had higher levels of anxiety, indicating a need for coaches working with female athletes to receive more training in this regard. It may be necessary to be more cautious in controlling the anxiety levels of female athletes during training protocols and sports events. Additionally, it is important for athletes to learn how to cope with anxiety. The research findings suggest that increased anxiety levels can lead to an increase in irrational thoughts. Irrational thoughts can lead to a detachment from reality and have a negative impact on sports performance.

Another aspect of the study involved comparisons between different sports, examining the relationships between anxiety levels and irrational performance beliefs. These comparisons revealed that these relationships and levels can vary across different sports. However, to obtain more precise results, further research focusing on specific sports with larger and qualitatively supported samples is recommended.

In conclusion, significant relationships exist between athletes' anxiety levels and irrational performance beliefs, and these emotions mutually influence each other.

Athletes should be provided with training in anxiety management skills. Teaching strategies to cope with anxiety can help athletes maintain control over their anxiety levels, which can have an impact on their performance.

Coaches, particularly when working with female athletes, should be trained in anxiety management techniques and closely monitor the anxiety levels of female athletes. Developing appropriate strategies to manage anxiety levels during training protocols and sports events is crucial.

Further investigation is needed to examine the relationship between anxiety levels and irrational performance beliefs across different sports. Conducting comprehensive research specific to individual sports will help gain a better understanding of the relationship between athletes' psychological characteristics and their performance.

Coaches and sport psychologists should provide individual counseling and guidance to athletes to question their irrational beliefs and assist them in transforming these beliefs in a positive direction. Cognitive techniques such as rational thinking strategies and positive self-confidence development strategies can be employed to enhance athletes' performance.

It is important to explore athletes' anxiety levels during competition periods in more detail. Collecting and analyzing data during actual competition conditions will provide a better understanding of how competition affects athletes' anxiety levels.

Future studies should employ qualitative research methods to gain a deeper understanding of athletes' experiences. Qualitative research can help us better understand athletes' experiences related to anxiety and irrational beliefs and their impact on performance.

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