

THE EFFECT OF MENTAL ENDURANCE IN SPORTS ON LEARNING AND SUCCESS IN INDIVIDUAL AND TEAM SPORTS

PERSONALIZAÇÃO DE SERVIÇOS FINANCEIROS: DIGITALIZAÇÃO, TRANSFORMAÇÃO, CONFIANÇA

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Abstract. The purpose of this study is to examine the effect of athletes' mental endurance on their learning and success in individual and team sports. As a method, this compilation study was carried out by scanning the existing literature on mental endurance and examining experimental and observational studies conducted in different sports branches. The literature search was conducted using academic databases such as PubMed, Google Scholar, and PsycINFO. In the studies reviewed, the effects of techniques such as visualization, cognitive-behavioral therapy, mindfulness and physical exercise on athletes were discussed. The findings reveal that mental toughness plays a critical role in improving the performance of athletes and is especially important in ensuring focus, motivation and performance sustainability during stressful moments. Visualization has helped athletes cope with stress by visualizing success, while cognitive-behavioral therapy has been effective in combating negative thoughts. Mindfulness, on the other hand, has increased athletes' ability to live in the moment and maintain mental freshness. In team sports, mental toughness has been observed to strengthen team collaboration and collective performance, as well as improve team members' ability to cope with stress. As a result, improving mental toughness contributes to the long-term success of athletes by increasing not only their physical performance but also their psychological resilience.

Keywords: Mental Endurance, Learning, Success, Team Sports, Psychological Education

Resumo. O objetivo deste estudo é examinar o efeito da resistência mental dos atletas em seu aprendizado e sucesso em esportes individuais e coletivos. Como método, este estudo de compilação foi realizado examinando a literatura existente sobre resistência mental e examinando estudos experimentais e observacionais conduzidos em diferentes ramos esportivos. A busca bibliográfica foi conduzida usando bancos de dados acadêmicos como PubMed, Google Scholar e PsycINFO. Nos estudos revisados, os efeitos de técnicas como visualização, terapia cognitivo-comportamental, atenção plena e exercícios físicos em atletas foram discutidos. As descobertas revelam que a resistência mental desempenha um papel crítico na melhoria do desempenho dos atletas e é especialmente importante para garantir foco, motivação e sustentabilidade do desempenho durante momentos estressantes. A visualização ajudou os atletas a lidar com o estresse ao visualizar o sucesso, enquanto a terapia cognitivo-comportamental foi eficaz no combate a pensamentos negativos. A atenção plena, por outro lado, aumentou a capacidade dos atletas de viver o momento e manter o frescor mental. Em esportes coletivos, observou-se que a resistência mental fortalece a colaboração da equipe e o desempenho coletivo, bem como melhora a capacidade dos membros da equipe de lidar com o estresse. Como resultado, melhorar a resistência mental contribui para o sucesso a longo prazo dos atletas, aumentando não apenas seu desempenho físico, mas também sua resiliência psicológica.

Palavras-chave: Resistência Mental, Aprendizagem, Sucesso, Esportes de Equipe, Educação Psicológica

1. INTRODUCTION

Mental toughness is defined as the ability of athletes to cope with stressful and challenging situations and to demonstrate emotional and psychological resilience. In sports, this feature increases not only physical performance but also psychological resilience, allowing athletes to cope with challenges. Athletes frequently encounter stress factors such as intense training, injuries, competitive environments, and high expectations. Such situations increase the

importance of mental toughness and reveal that being a successful athlete is possible not only with physical strength but also with mental strength. Mental toughness includes components such as self-efficacy, emotional control, motivation, focus, and coping skills (Fletcher & Hanton, 2001; Weinberg & Gould, 2018; Erdoğan & Koçal, 2024). These skills are critical for athletes to exhibit high performance and achieve long-term success. It has been proven by research that mental toughness enables athletes to achieve more sustainable success by increasing not only their physical performance but also their psychological resilience. Many studies on mental toughness show that when athletes develop these characteristics, their capacity to cope with stressful situations increases and they perform with higher motivation and focus (Jones, Hanton, & Connaughton, 2007; Sheard & Golby, 2006). The effect of mental toughness becomes more pronounced, especially in sports performed under high pressure. Athletes with mental toughness increase their success not only with their technical skills but also with their mental strategies (Mahoney, Ntoumanis, Mallett, & Gucciardi, 2014; Koç et.al, 2022). Mental toughness is one of the most important psychological factors that directly affects athletes' performance. Athletes need mental toughness to cope with difficult conditions and achieve their goals. Research shows that athletes with high mental toughness are more successful in coping with stress, focusing, and overcoming obstacles (Jones et al., 2007; Sheard & Golby, 2006). Being successful under high pressure and challenging conditions is directly related to the mental toughness of athletes. This is a finding that clearly shows the effect of mental toughness on success. Athletes with mental toughness focus more strongly when faced with difficulties, and this allows them to make strategic decisions and maintain emotional balance (Mahoney et al., 2014).

Mental toughness is important not only in individual performance but also in team sports. In team sports, players with high mental toughness are more successful in coping with stressful situations, and this positively affects the overall performance of the team. In addition, leadership skills and group dynamics within the team are also strengthened by mental toughness (Fletcher and Hanton 2001). The purpose of this review is to examine the effects of mental toughness on success in sports and to compile academic studies conducted in this field. The study aims to investigate the contribution of mental toughness to the performance of athletes, especially their success in challenging conditions. The literature review will evaluate the role of mental toughness in different sports branches and reveal the effect of this skill on success. In addition, the effects of mental toughness in both individual athletes and team sports will be discussed from different perspectives. This study will also discuss psychological techniques that can be used to increase mental toughness in sports and will offer new perspectives in this area. However, the study has some limitations. First of all, only written literature will be reviewed and field studies and individual case studies will be excluded. In addition, it is debatable whether mental toughness is equally important in every sport. It should be taken into account that physical factors may be more dominant in some sports (Hodge, 2018; Gould, Dieffenbach, & Moffett, 2002). Therefore, the generalization of the findings may be limited.

2. METHODOLOGY

This review study was conducted as a literature review aiming to examine the effect of mental toughness on success in sports. The study was conducted using existing academic databases and literature review methods..

2.1. Research Scope and Selected Studies

The literature review is limited to experimental and observational studies examining the relationship between mental toughness and success in sports. The studies were conducted in

both individual and team sports and addressed the effects of mental toughness on athletes' performance. The selected studies used surveys and observational techniques to measure psychological factors, and also evaluated the effects of various psychological techniques with experimental designs.

2.2. Data Collection Method

Data were collected from academic databases such as PubMed, Google Scholar, and PsycINFO. Data in the studies were collected through various surveys and observations on mental toughness, coping with stress, self-efficacy levels, and emotional balance. These surveys generally consist of questions aimed at assessing athletes' ability to cope with stress and their perception of their performance. In addition, some experimental studies have examined the effects of visualization, mindfulness, and breathing techniques on athletes' performance.

2.3. Study Review and Data Analysis

In this review, studies investigating the relationship between mental toughness and success were examined and the findings were evaluated. The findings reveal the effects of mental toughness on athletes' achievement of their goals and their performance under high pressure. In addition, comparisons were made on how mental toughness creates different effects in individual and team sports.

2.4. Limitations

Bu çalışmanın sınırlılıkları, yalnızca yazılı literatür taramasına dayanıyor olması ve saha araştırmalarının bu was not included in the study. In addition, it is debatable whether mental toughness is equally important in every sport. It should be noted that physical factors are more decisive in some sports. Therefore, the findings should be supported by larger field studies and case studies..

3. RESULTS

This section presents important literature reviews and research results investigating the effect of mental toughness on success. The methodology and findings of the studies are summarized, and the effects of mental toughness on success in sports and the determining factors are discussed. Mental toughness is defined as a set of psychological characteristics that significantly affect performance in sports and has been emphasized by athletes, coaches, psychologists and academics (Clough et al., 2002). Studies on the success of mental toughness in sports have revealed that the conceptual framework of this concept needs to be developed. Literature reviews on the definition, measurement and development of mental toughness include theoretical and applied advances (Cowden et al., 2016). The study by Şahinler and Ersoy (2019) aims to examine the mental toughness of athletes living in Kütahya and Isparta according to different variables. A total of 248 athletes (71 women and 177 men) participated in the study and a questionnaire was used as the data collection technique. The results show that many demographic variables are significantly related to the mental toughness levels of athletes. Another study conducted by İlhan (2024) examined the mental endurance levels of tennis players in Turkey. The findings reveal that experienced tennis players are more controlled and relaxed under pressure, and that mental endurance is affected by factors such as age and years of doing sports. The study conducted by Şahinler and Beşler (2021) on a total of 337 athletes, 229 women and 108 men, who had done sports for at least 1-3 years in Denizli, Afyon and Bartın provinces between 2020-2021 examined the mental endurance levels of individuals who do team and combat sports. The study shows that mental endurance varies in

terms of variables such as gender, years of doing sports, economic and educational status. Studies on the measurement of mental endurance have also provided important findings. It has been stated that there are strong correlations between different measurement tools of endurance. Sheard et al. (2009) tested the validity of the Sports Mental Toughness Questionnaire among competitive tennis players in South Africa, and this instrument captured the components of mental toughness in factors such as confidence, emotional control, and positive outlook (Cowden et al., 2016). Another study by Sheard, Golby, and Wersch (2009) examined the construct validity of the Sports Mental Toughness Questionnaire (SMTQ), which assesses mental toughness. The three-factor model of the SMTQ (Confidence, Continuity, and Control) was supported by two independent studies. The first study assessed 633 athletes (427 males, 206 females; mean age = 21.5 years) from 25 sports classifications and used item development and exploratory factor analytic techniques. The second study assessed 509 athletes (351 males, 158 females; mean age = 20.2 years) representing 26 sports using confirmatory factor analytic techniques. The general structure of the SMTQ was validated and shown to have adequate reliability, validity and discriminatory power. The results revealed that the SMTQ is an effective tool for measuring mental toughness and can be used to evaluate the impact of intervention programs.

Recent studies have examined the effect of mental toughness on sports performance in depth. Mental toughness not only increases emotional toughness, but also improves the ability to think strategically and perform optimally under stress (Chang et al., 2012). In the study by Sarkar and Fletcher (2014), the stress factors that athletes encounter and the protective factors that protect them from this stress were examined. In this study, the stressors that athletes encounter were divided into three main categories: competitive, organizational and personal. Protective factors include positive personality, motivation, self-confidence, focus and perceived social support. As a result, it was revealed that these protective factors increase the psychological toughness of athletes and protect them from the negative effects of stressors. In the study by Altıntaş (2015), the validity and reliability of the "Mental Toughness Inventory in Sports" was tested in Turkish athletes. A total of 202 athletes from football, basketball, volleyball, tennis, swimming and athletics participated. The results of the Confirmatory Factor Analysis show that the Turkish version of the inventory is reliable. The second aim of this study is to examine the relationships between motivation, goal orientation and optimal performance mood that affect the mental toughness of athletes in different branches. The results of Structural Equation Modeling reveal that there are significant positive relationships between mental toughness and these factors. In summary, this study shows that the Turkish version of the "Mental Toughness Inventory in Sports" is valid and reliable and that there are strong positive relationships between mental toughness and motivation, performance mood and goal orientation. Visualization, breathing exercises and mindfulness (conscious awareness) applications are among the techniques used to increase mental toughness. While visualization techniques help athletes mentally visualize their success and focus on their goals, breathing exercises contribute to coping with stress and providing mental clarity. Mindfulness applications help athletes live in the moment and focus on the moment (Infohaber, 2025). These techniques have been shown in various studies to positively affect athletes' performance, and it has been determined that conscious awareness practices increase well-being, performance, sleep quality and self-compassion, and reduce negative emotions such as burnout, anxiety and depression (Aktepe & Tolan, 2020). As a result, athletes who regularly apply these techniques can improve their performance by improving their mental resilience (Next Level Soul, 2025). In the study by Bıçkın and Tolukan (2023), the mediating role of basic psychological needs in the effect of mental resilience levels of taekwondo athletes on the coach-athlete relationship was examined. A total of 458 taekwondo athletes participated in the study and a questionnaire was used as the data collection method. The data analyzed with Structural Equation Modeling show that

athletes have high mental resilience levels and that coach-athlete relationships are also strong. Moreover, it was found that athletes' basic psychological needs were met at a high level and that these needs played a mediating role in the relationship between mental resilience and the coach-athlete relationship. These findings show that high levels of mental toughness in athletes have a positive effect on the coach-athlete relationship and that this effect is supported by the satisfaction of athletes' basic psychological needs. As a result, it is understood that mental toughness and the satisfaction of basic psychological needs strengthen athletes' performance and their relationships with coaches.

In a study conducted by Sevinç, Özmutlu, and Kapçak (2022), the mental toughness and creativity levels of football and basketball athletes were examined. In the study conducted on 426 active football and basketball players in Tekirdağ, it was observed that demographic factors (gender, undergraduate status, and undergraduate year) played a determining role on the mental toughness and creativity levels of athletes. However, no significant difference was observed in the sports branch variable. The meta-analysis conducted by Mahoney et al. (2014) revealed a strong relationship between mental toughness and success. The study shows that athletes with high mental toughness have the capacity to maintain their performance, especially under high pressure (Güngör, Kurtipek, & İlhan, 2022).

The analyses conducted according to demographic variables show that gender, branch, and being a national athlete do not create a significant difference on mental toughness and athlete professionalism (Karaca, Güngör, & Soyer, 2024). The findings obtained by Nicolls et al. (2008) also support these results. Research findings reveal that 57% of athlete professionalism is explained by mental toughness (Karaca et al., 2024). It has been observed that mental toughness has a positive effect on success in individual and team sports (Vicdanlı, 2023; Yarayan, Yıldız, & Gülşen, 2018). While individual athletes exhibit higher levels of mental toughness and self-confidence, mental toughness is supported by team dynamics for team athletes (Vicdanlı, 2023; Yarayan, Yıldız, & Gülşen, 2018). The effect of mental toughness on performance is more pronounced in individual athletes, and it has been stated that the success of these athletes largely depends on their own performance (Masum, 2014; Meggs, Ditzfeld, & Golby, 2014). In another study, it was found that social support and interactions within the team increase the mental toughness of athletes and contribute to team success in team sports (Kayhan & Hacıcaferoğlu, 2018). Mental toughness has been emphasized as a critical factor for sustaining long-term success in professional athletes (Tichenor and Tichenor, 2005; Güngör, Kurtipek, and İlhan, 2022). In the review study conducted by Crum (2022), meta-analysis methods were used to examine the relationship between mental toughness and athletic performance. The 76 studies included in the study were applied to athletes from different sports branches, and the findings indicated that mental toughness is not only a psychological but also a strategic and educational development process and plays a major role in increasing the performance of athletes. Existing studies in the literature have used different scales to measure mental toughness and various results have been obtained. Mental toughness scales are important tools for measuring and evaluating the mental toughness levels of athletes. These scales have yielded accurate and reliable results (Sheard et al., 2009; Güngör, Kurtipek, and İlhan, 2022). It is stated that mental toughness can create different effects depending on cultural and formal differences (Güvendi, Can, & Türksoy Işım, 2020). Studies conducted in different regions in particular show that the relationship between mental toughness and professionalism can change in cultural context (Juan & Lopez, 2015).

Mental toughness stands out as a critical factor that significantly affects athletes' success and increases their performance. Studies in the literature emphasize that mental toughness can be developed through increased education and training programs and that this is important in enabling athletes to exhibit high performance and supporting their long-term success (Clough, Earle, & Sewell, 2002). This review shows that mental toughness directly affects athletes'

success in different sports branches and levels and how these effects can be developed theoretically and practically. The findings emphasize the importance of mental toughness on performance and professionalism in athletes and serve as a guide for future research (Güngör, Kurtipek, & İlhan, 2022). This review study comprehensively examined the relationship between sports practice and psychological well-being. The findings reveal that sports improve brain functions through neurochemical changes, increase mood and stress management, develop psychological resilience, and increase social skills. It also emphasizes the importance of considering the psychological effects of sports from cultural and gender perspectives. The integrated application of physical and psychological strategies has a powerful effect in improving the overall well-being of individuals.

4. DISCUSSION

Mental toughness is one of the cornerstones of modern sports psychology and is an important factor affecting both the physical and psychological performance of athletes. Existing literature clearly demonstrates that mental toughness is a factor that increases success in both individual and team sports. Athletes with high mental toughness are more successful in coping with stressful situations, develop a sense of self-efficacy, and can sustain their performance for longer periods of time. For example, studies by Eminoğlu (2020) and Aktaş (2019) document the significant positive effects of high mental toughness on athletes' focus and performance continuity. Cingöz and Söyler (2023) concluded that exercise increases mental toughness and improves sports awareness. Similarly, Aktaş (2019) examined the effect of self-confidence levels on mental toughness in university team athletes and found that mental toughness levels increased significantly after psychological performance counseling. The study by Yun-Che Hsieh et al. (2023) reveals a moderate to high level of correlation between mental toughness and athletic performance, while the review study by Guskowska and Wojcik (2021) confirms the positive correlation between mental toughness and athletic performance. These findings show that mental toughness is a broad and multifactorial concept and contains different components in measurements. In this context, Mahoney et al. (2014) reveal that mental toughness not only helps to cope with stress, but also allows athletes to focus on goals, increase their self-confidence and motivation, and increase their performance. It is emphasized that such psychological factors allow athletes to show high performance even in difficult conditions. In addition, Jones et al. (2007) state that mental toughness is directly related to skills such as focus, motivation and self-confidence, especially in stressful moments. This means that athletes must cope not only with external challenges but also with internal factors. Mental toughness is an important element that covers not only individual performance but also team performance. Jones et al.'s (2007) research has shown that mental toughness is critical in increasing communication and group solidarity within the team in team sports. The study conducted by Şimşek and Kartal (2023) reveals the significant effects of demographic factors on mental toughness levels and emphasizes the role of mental toughness in team sports. Team members cope with stressful situations more effectively by supporting each other, which positively affects the overall success of the team. Especially in collective sports such as football and basketball, leadership and group harmony within the team are vital for the success of mental toughness. In this context, it is concluded that team members' coping with stressful situations by supporting each other can positively affect the overall success of the team. A strong mental toughness within the team increases leadership and group harmony, allowing the team to achieve common goals. This is an important factor for increasing team success, especially in collective sports such as football and basketball.

Mental toughness is supported in the literature as a skill that can be improved. Williams, Zinsser, and Bunker (2015) stated that visualization and breathing exercises are effective in

increasing mental toughness. Kabat-Zinn's (2003) studies on mindfulness techniques show that these techniques improve athletes' momentary performance and focus levels. Duman, Göksu, Köroğlu, and Talay's (2020) review highlights the positive relationship between the mental well-being of university students and their psychological resilience. Sharp et al.'s (2013) study evaluated the effectiveness of a mental skills training program (MST) for young male elite rugby athletes, demonstrating the positive effects of such programs on athletic performance. Stamatis et al.'s (2021) meta-analysis emphasizes that mental toughness training programs are generally effective but have methodological limitations. Cowden et al. (2021) stated that mental toughness training is an important psychological resource for optimal performance. Tokgöz's (2024) study revealed the relationship between the sports mental endurance levels and technical skills of young basketball players. Accordingly, the effect of mental endurance on dribbling was 15.8%, and this effect was determined to be statistically significant ($r^2=0.158$; $p<0.05$). Similarly, Turan's (2024) study examined the mental endurance levels of folk dance athletes and showed that male athletes had higher mental endurance levels than female athletes. Alexandra Martín-Rodríguez et al.'s (2022) study examined the comprehensive effect of sports practices on mental health, revealing that regular physical activity improves brain functions, increases memory and learning, prevents cognitive decline, and improves mood. These findings support the idea that mental endurance is not an innate characteristic but a skill that can be developed. Buyrukoğlu's (2023) study examined the loneliness levels and mental endurance of athletes actively involved in athletics, fitness, archery and dance; revealed the relationship between mental endurance and loneliness levels and emphasized the positive effects of developing these skills on sports performance.

One of the most important findings in this field is that methods such as visualization and mindfulness help athletes cope with stress, focus and increase their performance. Mental endurance is thought to play a critical role in increasing performance both mentally and physically. Coaches guiding athletes to develop these skills can enable athletes to achieve longer-term success.

Mental endurance is an important research topic not only for its effects on performance but also for the social and psychological lives of athletes. The concept of psychological endurance, as stated by Yazıcıoğlu (2024), helps individuals to be more resistant and focused in difficult conditions. This feature not only increases performance in sports, but also allows athletes to have a more solid stance in their social lives (Yazıcıoğlu, 2024). In particular, the ability to cope with stressful and challenging situations can have long-term positive effects on athletes' overall quality of life. Likewise, the impact of individual and environmental factors on psychological resilience, as stated by Özdeş (2024), plays a critical role in strengthening athletes' social ties and providing emotional control. Increasing mental resilience can help athletes be more successful in social interactions and develop cooperation skills. This can directly affect athletes' success both on and off the field (Özdeş, 2024). Çınar's (2021) studies also emphasize how psychological resilience can be strengthened with elements such as a positive mindset, social support, and problem-solving skills. Since athletes' psychological health directly affects their success levels, increasing mental resilience can improve not only athletic success but also their overall quality of life (Çınar, 2021). In this context, collectively addressing the social and psychological health of athletes will make a significant contribution to their long-term career goals.

5. CONCLUSION

Mental toughness is an important psychological feature that allows athletes to maintain their performance in stressful and challenging conditions. In the literature, it is seen that mental toughness is a factor that directly affects the overall success of athletes by increasing not only

physical performance but also psychological resistance. Developing mental toughness in both individual and team sports helps athletes maintain their focus, maintain emotional control and achieve their goals, while at the same time increasing team success by strengthening communication, leadership and cooperation within the group. In this context, coaches and psychological counselors guiding athletes in developing mental toughness plays a critical role in improving both individual performance and team success. Most of the research in the existing literature has focused on the short-term effects of mental toughness. However, it is clear that more research is needed on how mental toughness changes throughout athletes' careers and its long-term effects. More comprehensive studies examining the effects of mental toughness at different stages of athletes' careers can provide more information about the development process of this skill. In addition, comparing mental toughness levels in different sports can provide important findings that show whether this skill is reflected in different ways in each sport. In this context, it is emphasized that exercises are an effective method in increasing mental toughness and coping with stress. Studies reveal that mental toughness is a broad and multifactorial concept and suggest various strategies for the development of this concept. Future research should examine mental toughness levels in different sports and analyze the relationship of this skill with demographic factors such as gender, age and sports experience in more depth. In addition, more extensive studies should be conducted on both individual and team athletes in order to understand the role of mental toughness in successful performance. This information can contribute to the creation of more effective and individual-specific training programs in the field of sports psychology.

Suggestions

1. **Mental Toughness Training Programs:** Coaches should prepare special training programs for athletes to increase their mental toughness. These programs should focus on psychological elements such as stress management, focus, motivation and emotional control. Techniques such as visualization, mindfulness and breathing exercises will be effective in developing mental toughness.
2. **Psychological Support During Training Processes:** During training periods, athletes should be provided with psychological support as well as physical training. This will enable athletes to better maintain their performance under challenging conditions and gain mental toughness. Providing continuous psychological support will help athletes cope with stress and increase their overall performance.
3. **Recommendations for Future Research:** Future research should comprehensively examine the effects of mental toughness in different sports branches. In addition, the effectiveness of applied strategies to increase athletes' mental toughness should be evaluated and the knowledge in this area should be enriched. Long-term studies will help us understand the effects of mental toughness on athletes' careers.
4. **Leadership Development in Team Sports:** Developing the leadership skills of players with mental toughness in team sports will increase interaction and solidarity within the team and reinforce overall success. Coaches can strengthen the leadership competencies of players by creating special programs that support such development processes.
5. **Mental Toughness Tests and Measurement:** Athletes' mental toughness levels should be assessed with objective measurement tools. These measurements allow the development of personalized psychological strategies by determining the strengths and weaknesses of athletes. Continuous monitoring of mental toughness will make the development process more efficient.
6. **Social Support and Team Dynamics:** In team sports, strong social support networks should be established among players. These networks will increase the mental toughness of players and reinforce team success. Strong social ties within the team positively affect group performance by increasing resilience in stressful moments.

7. Continuous Development of Mental Toughness: Mental toughness is a skill that can be continuously developed. It is important for athletes to receive continuous psychological support and training in order to develop this skill at every stage of their careers. This process will play an important role in ensuring the sustainability of athletes' careers.

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