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Original Article

The Investigation of Mental Toughness of Elite Wrestlers

Yunus Emre DEDE¹, Savaş DUMAN²

Abstract

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Keywords Sports, Wrestling, Visualization The aim of this study is to investigate the mental toughness of elite wrestlers. This study is a cross-sectional study, which is considered in terms of describing the mental toughness levels of elite wrestlers competing at the national team level and the personal variables that affect mental toughness. In this study, 203 elite athletes (in the 14-30 age range, 55 females and 148 males) interested in wrestling at the Turkish National Team level voluntarily participated. The data of the study were collected in 8 months. Mental Toughness Scale was used as a data collection tool. According to the results of the study, it can be said that elite wrestlers have high levels of mental toughness, but they have problems with mental toughness in difficult situations in the fighting environment. In addition, when mental toughness was examined according to various variables, it was observed that there was only a difference according to the educational status variable.

Elit Güreşçilerin Zihinsel Dayanıklılığının İncelenmesi

Özet

| Yayın Bilgisi Gönderi Tarihi: 09.12.2020 Kabul Tarihi: 23.02.2021 Online Yayın Tarihi: 23.02.2021 | Bu çalışmanın amacı, elit güreşçilerin zihinsel dayanıklılığını araştırmaktır. Bu çalışma, milli takım düzeyinde yarışan elit güreşçilerin zihinsel dayanıklılık düzeylerini ve zihinsel dayanıklılığı etkileyen kişisel değişkenleri tanımlaması açısından ele alınan kesitsel bir çalışmadır. Bu araştırmaya Türk Milli Takımı düzeyinde güreşle ilgilenen 203 seçkin sporcu (14-30 yaş aralığında, 55 kadın ve 148 erkek) gönüllü olarak katılmıştır. Çalışmanın verileri 8 ayda toplamıştır. Veri toplama aracı olarak Zihinsel Dayanıklılık Ölçeği kullanılmıştır. Araştırmanın sonuçlarına göre elit güreşçilerin yüksek düzeyde zihinsel dayanıklılığa sahip oldukları ancak dövüş ortamındaki zor durumlarda zihinsel dayanıklılık ile ilgili sorunları olduğu söylenebilir. Ayrıca zihinsel |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Anahtar Kelimeler | dayanıklılık çeşitli değişkenlere göre incelendiğinde sadece eğitim durumu değişkenine |
| Spor, Güreş, Göreselleştirme | göre farklılık olduğu görülmüştür. |

*E-mail of the corresponding author: savas.duman@adu.edu.tr

¹Kurşunlar Ortaokulu, Küme Evler Cad. No: 18/A, 06480 Mamak/Ankara, Turkey

²Faculty of Sports Sciences, Aydın Adnan Menderes University 09010 Efeler/Aydın, Turkey

Introduction

Sport is expressed as "a disciplined collective style of play built on competition and rivalry that matures the warrior forces" (Yazıcı, 2014). The most common sport among the sports branches of the ancient Turks and which continues to be popular until today is wrestling. Wrestling, a natural form of struggle, has a history that goes as long as human history. The inherent desire to survive and live better has made humans aggressive towards each other and forced them to struggle. In general, wrestling is "the struggle of two wrestling athletes on a cushion of certain sizes, without using any tools, in accordance with the rules of the United World Wrestling (UWW), using their technique, skills, strength and intelligence" (Gürsoy, 1996).

Wrestling sport has hosted many different genres from past to present. These are Freestyle wrestling, Greco-Roman wrestling, Karakucak wrestling, Oil wrestling, Şalvar wrestling, Aba wrestling, Kuşak wrestling. The athletes who achieve success in wrestling are those who have the best exercise and training qualities, as well as sports and athlete psychology and mental toughness.

Actkada and Ergen (1990) argued that endurance is a conditioned feature that occurs entirely due to aerobic energy production of the organism and that non-stop work over a three-minute period develops completely based on the aerobic energy system as time goes on. According to Açıkada and Ergen (1990), the endurance capacity of the individual is examined aerobically as the structure of the organism. Endurance, one of the basic motoric features, plays an important role in all sports branches. Endurance is related to the ability to continue all movements and exercises for a long time and to resist fatigue for a long time (Açıkada & Ergen, 1990). Mental toughness, on the other hand, can be explained by concepts such as mental resilience, strong instinctive belief, effective coping with pressure and difficulties and negative situations, empowerment with pressure, being connected, and having superior concentration skills (Connaughton et al., 2010; Crust, 2008; Sheard, 2013). Generally, mental toughness appears as a representation of a group of psychological concepts that will be used for success and high performance in adverse situations (Clough et al., 2002). Factors affecting mental toughness can be listed as physical activity, diet, past experiences, social life, and lifestyle (https://nomoreharm.com.au, 2019). Mental toughness has been a concept emphasized by sports researchers, trainers, athletes, and sports managers in recent years. Moreover, this concept has come to be seen as an important prerequisite for sustained athletic success (Jones et al., 2007). Again, when we talk about the achievements of mental toughness on motivation and success, we cannot separate self-speech. Thanks to self-speech, athletes' mental toughness increases (Bülbül & Akyol, 2020).

When the literature is reviewed, there is no study examining the mental toughness of elite wrestlers. The results of our study will take place in a more specific field under the title of "elite wrestlers" in the mental toughness literature. Also, the fact that there is a significant relationship between educational status and mental toughness, which is one of the results of our study, will contribute to the literature in a way that supports the reality of the relationship between sports and education. The ability of athletes to cope with the emotional changes they experience in the competitions is largely related to the mental toughness they have, as well as their ability to prepare themselves psychologically and mentally. Thus, the aim of this study, which focuses on wrestling sport, is to examine the mental toughness of elite wrestlers.

Method

Participants

As the universe of this research, 203 elite wrestlers who were in the national team camps between 30 April 2018-10 January 2019 were determined. Survey permits for the application were taken from Turkey Wrestling Federation. A total of 203 athletes (in the 14-30 age range, 55 females, and 148 males) who were interested in the branch of wrestling participated in the study voluntarily. Since all the athletes participated in the study, a separate sample calculation was not made.

Collection of Data

The descriptive survey method (questionnaire) was used in the research. Descriptive survey studies are studies conducted on large groups, in which the opinions, attitudes and perceptions of the individuals in the group about a phenomenon and an event are taken, it is tried to describe the facts and events and the situation is tried to be determined. The questionnaire we use is of cross-sectional survey type. It was realized by not going to the universe and instead taking objects from groups of quantity and quality to represent it.

Data Collection Tool

In the research, as a data collection tool, the Personal Information Form determined by the researcher to obtain demographic information of the participants and the Mental Toughness Scale were used to determine the mental endurance levels of the participants.

Personal Information Form

In order to determine the personal characteristics of the individuals participating in the study, a personal information form consisting of 13 questions prepared by the researcher and containing demographic information was used.

Mental Toughness Scale

In order to determine the mental toughness of the wrestlers, the Mental Toughness Scale developed by Madrigal et al. (2013) and later adapted into Turkish by Erdogan (2016) was used. The reliability coefficient of this one-dimensional 5-point Likert type scale consisting of 11 items was found to be 0.87.

Statistical Analysis

The analysis of the data was done in SPSS (Statistical Package For Social Sciences) 22.00 package program. In paired comparisons, since the sample group selected from the universe represents the universe and showed the normal distribution and the sample size was over 30 (central limit theorem), T-Test from parametric tests, one-way analysis of variance (ANOVA), LSD from Post-Hoc tests, and Pearson Correlation analysis were used. Results were evaluated statistically (p<0.05) over the significance value.

Results

Finding values obtained as a result of the analysis were transferred to the tables and their comments were made.

Table 1. Descriptive Statistical Analysis Results According to Total Participation Rate of Elite Wrestlers

 Participating in the Study

| Ν | Min. | Max. | X | Sd |
|-----|------|------|--------|--------|
| 203 | 1.36 | 9.09 | 4.0354 | .79382 |

Table 1 shows that the total participation in the study consisted of 203 wrestlers and thus the entire universe was reached.

| Table 2. Correlation A: | nalysis Results for the | e Relationship between th | e Variables of Mental | Toughness and |
|-------------------------|-------------------------|---------------------------|-----------------------|---------------|
| Sports Age | | | | |

| Variables | 8 | Mental Toughness | Sports Age | |
|------------------|---|------------------|------------|--|
| | R | 1 | .052 | |
| Mental Toughness | Р | | .463 | |
| | Ν | | 203 | |
| | R | .052 | 1 | |
| Sports Age | Р | .463 | | |
| | Ν | 203 | | |

Table 2 indicates that there is no relationship between mental toughness and sports age variable.

Table 3. T-Test Results by Mental Toughness Categories

| Categories | N | X | Sd | Т | Р |
|-------------|-----|--------|--------|-----|------|
| Free-Style | 151 | 4.0102 | .83409 | 768 | .443 |
| Greco-Roman | 52 | 4.1084 | .66513 | 857 | .393 |

Table 3 shows that there is no difference between the categories of the mental toughness of elite wrestlers.

Table 4. Anova Test Results in terms of National Category Variable of Mental Toughness

| National Category | Ν | Х | Sd | F | Р |
|-------------------|-----|--------|--------|------|------|
| B National Team | 56 | 3.9562 | .78911 | | |
| C National Team | 62 | 4.0176 | .93406 | .452 | .654 |
| Total | 203 | 4.0354 | .79382 | | |

Table 4 indicates that there is no difference between the mental toughness variable and the nationality category.

| Table 5. T-Test Results of Mental Toughness According to the Gender Variable |
|------------------------------------------------------------------------------|
|------------------------------------------------------------------------------|

| Gender | Ν | Χ | Sd | Т | Р |
|--------|-----|--------|--------|------|------|
| Male | 148 | 4.0414 | .85263 | .188 | .851 |
| Female | 55 | 4.0182 | .61469 | .217 | .828 |

Table 5 shows that there is no difference in mental toughness according to the gender variable.

Table 6. T-Test Results of Mental Toughness According to the Marital Status Variable

| Marital Status | Ν | Х | Sd | Т | Р |
|-----------------------|-----|--------|--------|-----|------|
| Single | 164 | 4.0344 | .82668 | 037 | .970 |
| Married | 39 | 4.0396 | .64680 | 043 | .966 |

Table 6 shows that there is no difference in mental toughness according to the marital status variable.

| Table 7. T-Test Results of Mental | Toughness Accordin | g to the Smoking Variable |
|-----------------------------------|--------------------|---------------------------|
| | | |

| Smoking | Ν | Х | Sd | Т | Р |
|---------|-----|--------|--------|-----|------|
| Yes | 40 | 4.0250 | .75135 | 039 | .969 |
| No | 161 | 4.0305 | .80731 | 041 | .968 |

Table 7 indicates that there is no difference in mental toughness according to the smoking variable.

Table 8. T-Test Results of Mental Toughness According to the Alcohol Use Variable

| Alcohol Use | N | X | Sd | Т | Р |
|-------------|-----|--------|--------|------|------|
| Yes | 32 | 4.1013 | .77165 | .518 | .605 |
| No | 171 | 4.0229 | .79950 | .531 | .598 |

Table 8 shows that there is no difference in mental toughness according to the alcohol use variable.

| Table 9. T-Test Results of Mental Toughness According to the Self-Talking Variable |
|-------------------------------------------------------------------------------------------|
|-------------------------------------------------------------------------------------------|

| Self-Talking | Ν | X | Sd | Т | Р |
|--------------|-----|--------|--------|------|------|
| Yes | 180 | 4.0364 | .81519 | .049 | .961 |
| No | 23 | 4.0277 | .61562 | .061 | .952 |

Table 9 indicates that there is no difference in mental toughness according to the self-talking variable.

| Table 10. Anova Test Results in terms of Living Together Variable of Mental Toughness | | | | | | | |
|---------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Ν | Χ | Sd | F | Р | | | |
| 108 | 3.9941 | .89057 | | .632 | | | |
| 41 | 4.0310 | .69372 | 460 | | | | |
| 54 | 4.1212 | .65293 | .460 | | | | |
| 203 | 4.0354 | .79382 | | | | | |
| | N 108 41 54 | N X 108 3.9941 41 4.0310 54 4.1212 | N X Sd 108 3.9941 .89057 41 4.0310 .69372 54 4.1212 .65293 | N X Sd F 108 3.9941 .89057 .41 4.0310 .69372 .460 54 4.1212 .65293 .460 .460 | | | |

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Table 10 shows that there is no difference in mental toughness according to the "living together" variable.

| Educational Status | Ν | Χ | Sd | F | Р |
|---------------------------|-----|--------|---------|-------|------|
| Secondary | 2 | 6.4545 | 3.72838 | 5.116 | .001 |
| Lycee | 34 | 3.9920 | .65531 | | |
| Undergraduate | 143 | 4.0203 | .76285 | | |
| Master degree | 22 | 4.0000 | .47113 | | |
| Doctorate degree | 2 | 3.8182 | .00000 | | |
| Total | 203 | 4.0354 | .79382 | | |

Table 11. Anova Test Results in terms of Educational Status Variable of Mental Toughness

Table 11 indicates that there is a difference in mental toughness according to the educational status variable.

 Table 12. Anova Test Results in terms of "Family Attitudes for Choosing a Sport Branch" of Mental

 Toughness

| Family Attitudes | Ν | Х | Sd | F | Р |
|------------------|-----|--------|--------|------|------|
| Supporting | 143 | 4.0114 | .87636 | | |
| Reckless | 29 | 4.0219 | .42199 | | |
| Critical | 18 | 4.1869 | .49839 | .282 | .838 |
| Blocker | 13 | 4.0979 | .84089 | | |
| Total | 203 | 4.0354 | .79382 | | |

Table 12 shows that there is no difference in terms of family attitudes when choosing a branch variable of mental toughness.

| Table 13. Anova Test Results in terms of Social Situation Variable of Mental Toughness | | | | | | | |
|----------------------------------------------------------------------------------------|-----|--------|--------|------|------|--|--|
| Social Situation | Ν | Х | Sd | F | Р | | |
| Those who regularly participate in social activities | 111 | 4.0319 | .92244 | | | | |
| Those who do not regularly participate in social activities | 68 | 4.0107 | .61287 | .173 | .841 | | |
| Never Participating | 24 | 4.1212 | .60103 | .1/5 | .041 | | |

Table 13. Anova Test Results in terms of Social Situation Variable of Mental Toughness

Table 13 indicates that there is no difference in terms of the social situation variable of mental toughness.

203

4.0354

.79382

Discussion and Conclusion

Total

This study was carried out to determine the mental toughness levels of elite wrestlers competing at the national team level according to some variables. In this study, which was carried out to examine the mental toughness of elite national wrestlers according to some variables and to reveal the relationship between them, elite national wrestlers considered to accept as correct all sub-dimensions of the Mental Toughness Scale, and accordingly, wrestlers' mental toughness levels were high, but in difficult situations in the fighting environment, it can be said that they have a number of problems related mental toughness. In addition, when the mental toughness of elite wrestlers was examined according to other variables, a difference was found only according to the educational status variable. On the other hand, in terms of other variables, it was determined that there was no significant difference between the groups in the mental toughness levels of elite wrestlers according to the educational status variable, it can be said that there is a significant difference in the mental toughness levels of elite wrestlers according to the educational status variable, it can be said that there is a significant difference in terms of mental toughness levels of elite wrestlers with undergraduate education compared to elite

wrestlers with lycee education. In addition, within the demographic variables, it was observed that there was a difference in favor of elite wrestlers with postgraduate education in the comparison of elite wrestlers with lycee education and elite wrestlers with postgraduate education. In one of the similar studies in the literature; Crust et al. (2014) reported that education and mental toughness had a similar relationship with an increased rate. Fisher and Hood (1987) suggested that, in line with our research, education level should increase in order to increase mental toughness. There was no significant difference in terms of the mental toughness of elite wrestlers by gender variable. It can be expressed that male elite wrestlers have higher average mental toughness than female elite wrestlers. When the literature is examined, it can be said that there are researches that are similar to our study results. Nicholls et al. (2009), in their research, stated that mental toughness levels differ in favor of boys. Findlay and Bowker (2009), who found a difference in favor of boys, suggested that this difference was related to the support of boys in society more than girls (Madrigal et al., 2015). Masum (2014), in his study with tennis players, mentions the levels of mental toughness that he determined in favor of men. Juan and Lopez (2015) also suggested that male athletes had higher and better mental toughness levels and strength than female athletes. Nicholls et al. (2009) in a study conducted on 677 athletes, it was found that there was a statistically significant relationship between gender and mental toughness. In a different study, the mental toughness levels of individual athletes and team athletes were examined and it was reported that there was no difference in mental toughness levels according to gender (Kayhan et al, 2018). Considering the cultural differences, the lack of evidence on the change in mental toughness on gender differences in the Turkish population makes it impossible to make a clear comment on this issue. In addition, another point that needs to be emphasized is the view that mental toughness can change specific to each branch of sports and can be affected by different dynamics (Gucciardi & Bull, 2005; Gordon et al., 2009). Our study showed that there was no difference between the mental toughness of elite wrestlers according to the sports age variable. The reason for this may be that all wrestlers continue their education and lives in the same environment over time compared to other branches of sport. At this point, it can be said that the result that there is no significant difference between the age of sports in this branch on mental toughness among elite wrestlers may be understandable. Unlike this study, Connaughton et al. (2008), in their research, found that age was directly proportional to mental toughness in sports, and accordingly, older athletes had stronger mental toughness. Yıldız and Yılmaz (2017), in their studies on mental toughness and self-efficacy, found that as age increases, mental toughness also increases. Yardımcı et al. (2017), in their study on American football players, observed that the mental toughness levels of the 24-year-old and over group were higher than the younger ones. Konter (2016), in his study on university students, concluded that age and sports courage were positively correlated. Crust et al. (2014), although not similar to the results of our study, stated that age was important in determining the level of mental toughness. In addition, Marchant et al. (2009) and Nicholls et al. (2009) stated that mental toughness showed a parallel interaction with age. Crust (2009) also found that there was no relationship between mental toughness and age. Our study indicated that there was no difference between the mental toughness of elite wrestlers according to the social status variable. Unlike our study, there were studies in the literature that found a difference between social status and mental toughness (Juan & Lopez, 2015; Nicholls et al., 2009; Bull et al., 2005). Madrigal et al. (2013) reported that

the mental toughness levels of team athletes would be positively affected by the social support they could receive from their friends, and individual athletes should make more effort to close this gap. In the study, "Can you self-talk with yourself?" The question was asked, and it was observed that there was no difference between the variables. Similar to our study, Lopez et al. (2003) defined mental toughness as the ability to overcome physical and overwhelming fear of harm or death. It has been observed that there was no difference between the mental toughness of elite wrestlers according to the national category. Concerning the study, Konter (2015) observed in his study, on professional footballers that non-national athletes had higher scores of risk-taking and self-sacrifice than national athletes. Our study showed that there was no difference between the mental toughness of elite wrestlers according to the "who do you live with" variable. In another study close to our study, it was emphasized that especially young athletes' parents and trainers should adopt a challenging, moral, and competitive attitude in developing the right environment for the development of athletes (Crust & Clough, 2011). Our study showed that there was no difference in terms of the mental toughness of elite wrestlers according to smoking & alcohol use variable. We can explain this situation as substance users suffer less bodily damage because they are constantly in active sports and training life. In our study, it was observed that there was no difference between the mental toughness of elite wrestlers according to the marital status variable. This situation shows that the mental toughness of single or married elite wrestlers is close to each other. Our study indicated that there was no difference between the mental toughness of elite national wrestlers according to the category status variable. Considering the Free-Style and Greco-Roman categories of elite wrestlers, it can be said that such a result is encountered because the athletes of these two categories continue their sports activities under the same conditions. In our study, it was found that there was no difference between the mental toughness of elite national wrestlers according to the family attitude variable when choosing the branch. This result reflects that family attitudes of elite wrestlers do not have a significant effect on mental toughness after starting the branch and reaching a certain level, and there is no significant difference between the mental toughness of elite wrestlers. When the related literature is examined, in line with this information, Nicholls et al. (2009), found a statistically insignificant finding of the level of achievement in terms of mental toughness, contrary to the findings we obtained, in their research with the sample of athletes. When the theoretical explanations about mental toughness are examined, it is thought that the perception that athletes with high success levels should have high mental toughness (Crust, 2008) supports the findings of our study, but it is thought to be insufficient. Because the concept of mental toughness, which could not be theoretically based on a fully theoretical framework (Ahern et al., 2006; Crust, 2008), Sheard et al. (2009) raise the question that it may have shortcomings in the theoretical framework defined by. Based on our research findings within the framework of the theoretical structure on which the Mental Toughness measurement tool we used is based on measuring the mental toughness of athletes, it can be said that mental toughness is generally related to the success level.

References

Açıkada, C., & Ergen, E. (1990). Bilim ve Spor. Ankara: Büro-tek ofset Matbaacılık.

Ahern, N.R., Kiehl, E.M., Sole, M.L., & Byers, J.A. (2006). Review of instrumnts measuring resilience. Issues in Comprehensive Pediatric Nursing, 29(2), 103-125.

- Bülbül, A., Akyol, G. (2020). The effect of self-talk self on athletes. *African Educational Research Journal*, 8.
- Bull, S.J., Shambrook, C.J., James, W., & Brooks, J.E. (2005). Towards an understanding of mental toughness in elite English cricketers. *Journal of Applied Sport Psychology*, 17(3), 209-227.
- Clough, P., Earle, K., Sewell, D. (2002). Mental toughness: The concept and its measurement. in cockerill I, *Solutions in Sport Psychology*. 1st ed, 32-45.
- Connaughton, D., Wadey, R., Hanton, S., & Jones, G. (2008). The development and maintenance of mental toughness: Perceptions of elite performers. *Journal of Sports Sciences*, 26, 83-95.
- Connauhhton, D.H., Anton, S., & Jones, G. (2010). Gelişim ve bakım ait RuhTW'deki toklukorld'un en iyi performansı. *Sports Psikolog*, 24, 168-193.
- Crust, L. (2009). The relationship between mental toughness and affect intensity. *Personality and Individual Differences*, 47(8), 959-963.
- Crust, L., & Clough, P.J, (2011). Zihinsel sağlamlığın geliştirilmesi: Araştırmadan, uygulama. Spor Psikolojisi Dergisi, 2, 21–32.
- Crust, L., Earle, K., Perry, J., Earle, F., Clough, A., & Clough, P.J. (2014). Yükseköğretimde zihinsel sağlamlık: birinci sınıf üniversite sporu öğrencilerinde başarı ve ilerleme ile ilişkiler. *Pers. Tek. Dif.*, 69, 87–91.
- Crust, L.A. (2008). Review and conceptual re-examination of mental toughness: Implications for future researchers. *Personality and Individual Differences*, 45, 576-583.
- Erdoğan, N. (2016). Zihinsel Dayanıklılık Ölçeği (ZDÖ): Türkçe'ye uyarlama, geçerlik ve güvenirlik çalışması. *International Journal of Science Culture and Sport*, 4(2), 652-664.
- Findlay, L.C., & Bowker, A. (2009). The link between competitive sport participation and self-concept in early adolescence: A consideration of gender and sport orientation. *Journal of Youth and Adolescence*, 38(1), 29-40.
- Fisher, S., & Hood, B. (1987). The stress of the transition to university: a longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. *British Journal of Psychology*, 78(4), 425-441.
- Gucciardi, D.F., Gordon, S., & Dimmock, J.A. (2009). Development and preliminary validation of a mental toughness inventory for Australian football. *Psychology of Sport and Exercise*, 10(1), 201-209.
- Gürsoy, Ö. (1996). Güreş Öğretim Yöntemleri, Ankara: Yeni Doğuş Matbaacılık.
- Jones G, Hanton, S, Connaughton D. (2007). A framework of mental toughness in the world's best performers. *Sport Psychol*, 21(2), 243-64.
- Juan, M.V.T. & Lopez, A. (2015). Mental Toughness of Scholar Athletes. Researchers World, 6(3), 22.
- Kayhan, R.F., Hacıcaferoğlu, S., Aydoğan, H. & Erdemir, İ. (2018). Takım ve Bireysel Sporlar ile İlgilenen Sporcuların Zihinsel Dayanıklılık Durumlarının İncelenmesi. Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi, 5 (2), 55-64.
- Konter, E. (2015). Sporda motivasyon. İzmir: Saray Tıp Kitapevleri.
- Konter, E. (2016). Sporda motivasyon. İzmir: Saray Tıp Kitapevleri.
- Lopez, S.J., Koetting O'Byrne, K., & Petersen, S. (Eds.). (2015). Profiling courage. Washington, DC: American Psychological Association.
- Madrigal, L., Hamill, S., & Gill, D.L. (2013). Mind over matter: The development of the mental toughness scale (MTS). *Sport Psychologist*, 27(1), 62-77.
- Madrigal, L., Robbins, J., Gill, D.L., & Wurst, K. (2015). A pilot study investigating the reasons for playing through pain and injury: Emerging themes in men's and women's collegiate rugby. *The Sport Psychologist*, 29(4), 310-318.
- Marchant, D.C., Polman, R.C.J., Clough, P., Jackson, J.G., Levy, A.R., & Nicholls A.R. (2009). Zihinsel tokluk: yönetim ve yaş farklılıkları. *J. Yönet. Psyschol*, 24, 428-437.
- Masum, R. (2014). A mixed method analysis of mental toughness in elite and sub-elite male and female tennis players in Pakistan. *Advances in Social Sciences Research Journal*, 1, 110-122.

- Nicholls, A.R., Polman, R., Levy, A., & Backhouse, S.H. (2009). Mental toughness in sport: Achievement level, gender, age, experience and sport type differences. *Personality and Individual Differences*, 47, 73–75.
- Sheard, M, Golby, J., & Van Wersch, A. (2009). Progress towards construct validation of the Sports Mental Toughness Questionnaire (SMTQ). *European Journal of Psychological Assessment*, 25, 186-193.
- Sheard, M. (2013). Mental Toughness: The Mindset Behind Sporting Achievement. Second Edition, Hove, East Sussex: Routledge.
- WEB 1.(2019). https://nomoreharm.com.au/5-factors-that-affect-your-mental-health/. (15.4.2019/23.54).
- Yardımcı, A., Sadık, R., & Tezcan Kardaş, N. (2017). Amerikan futbolu sporcularının yalnızlık düzeyleri ve sporda mental dayanıklılık düzeyleri arasındaki ilişkisi. Spor Bilimleri Araştırmaları Dergisi, 2(2), 79-90.
- Yazıcı, A. G. (2014). Toplumsal dinamizm ve spor. Uluslararası Türkçe Edebiyat Kültür Eğitim (TEKE) Dergisi, 3(1), 394-405.

Makale Alıntısı

(†)

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