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The Investigation of Aggression Levels of The Combat Sport Athletes*

Ümid KARLI[1], Nuh Osman YILDIZ[1], Ünal KARLI[1], Hanifi ÜZÜM[1†]
[1]Bolu Abant İzzet Baysal University, Faculty of Sport Sciences, Bolu.

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Abstract

The purpose of this study was to evaluate the aggressiveness level of male and female combat sport athletes and the sedentary individuals. This study was designed on cross-sectional research method, which is one of the general survey models. Buss Perry Aggression Questionnaire was used as data collection tool. Convenient sampling method was conducted, and the sample group of the study was composed of 104 combat sport athletes and 97 sedentary participants. Independent samples t-test and Pearson Correlation Coefficient test was conducted for statistical analysis. According to the independent samples t-test the physical aggression level of combat sport athletes was significantly higher than the sedentary individuals ($p<0.05$). Additionally, physical aggression level of female athletes was significantly higher than their sedentary counterparts ($p<0.05$). In the comparison of the gender difference, the results revealed that sedentary males' physical aggression level was significantly higher than sedentary females ($p<0.05$). No significant relationship was found between subjects' aggression level and their age and sports age. The female combat athletes' higher physical aggression level, when compared to their sedentary counterparts, was the most interesting finding of this study. On the other hand, no significant difference was found between male athletes and their sedentary counterparts, and between male and female combat sport athletes according to their aggression levels. To sum up briefly, it is possible to say that females, who participate in combat sports and consequently who believe that they have gained enough physical power, may show higher physical aggression tendency.
Keywords: Combat athletes, Physical aggression, Hostility, Verbal aggression, Anger

Mücadele Sporu Sporcularının Saldırganlık Düzeylerinin İncelenmesi

Öz

Bu çalışmanın amacı, erkek ve kadın mücadele sporu sporcuları ile sedanter bireylerin saldırganlık düzeylerini değerlendirmektir. Bu çalışma genel tarama modellerinden biri olan kesit alma yöntemine göre tasarlanmıştır. Veri toplama aracı olarak Buss Perry Saldırganlık Ölçeği kullanılmıştır. Araştırmada kolayda örnekleme yöntemi kullanılmış olup, örneklem grubunu 104 dövüş sporu sporcusu ve 97 sedanter katılımcı oluşturmuştur. İstatistiksel analiz için bağımsız örneklemlerde t testi ve Pearson Korelasyon Katsayısı testi yapılmıştır. Bağımsız örneklemlerde t testine göre mücadele sporu yapan sporcuların fiziksel saldırganlık düzeyi sedanter bireylerden anlamlı ($p<0.05$) olarak daha yüksek bulunmuştur. Ayrıca kadın sporcuların fiziksel saldırganlık seviyesi sedanter olan kendi hemcinslerinden anlamlı ($p<0.05$) olarak daha yüksek tespit edilmiştir. Cinsiyetler arası farka bakıldığında sedanter olan erkeklerin fiziksel saldırganlık düzeyinin sedanter olan kadınlardan anlamlı ($p<0.05$) bir biçimde daha yüksek olduğu saptanmıştır. Mücadele sporları ile ilgilenen bireylerin yaşları veya spor yılları ile saldırganlık arasında bir ilişki belirlenmemiştir. Bu çalışmanın en önemli sonucu kadın mücadele sporcuların fiziksel saldırganlık düzeylerinin sedanter olan hemcinslerinden daha yüksek olmasıdır. Diğer taraftan saldırganlık seviyesi bakımından sporcu olan ve olmayan erkekler arasında ve kadın ve erkek mücadele sporcuları arasında fark bulunmamıştır. Sonuçlar kısaca özetlenirse mücadele sporlarına katılan ve dolayısıyla fiziksel olarak yeterli güç kazandığını düşünen kadınların fiziksel saldırganlık eğilimlerinin artabileceği söylenebilir.
Anahtar kelimeler: Mücadele sporcuları, Fiziksel saldırganlık, Düşmanlık, Sözel saldırganlık, Öfke

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† **Corresponding Author:** Assoc. Prof. Dr. Hanifi ÜZÜM, **E-mail:** uzum_h@ibu.edu.tr

INTRODUCTION

Aggression which was defined as one's physical or mental behaviours towards any other individual with the intent of endamaging (Krishnaveni and Shahin, 2014), appears as a conception that individuals might be faced with almost at any moment in daily life as the enforcer or the exposed. Aggression is involved in daily life, at home, at workplace, in traffic and even at shopping malls, amusement centres, sports areas where people go with recreative purposes to feel happy and comfortable. It is observed that the aggressive behaviours at sports areas where trail large masses are especially increasing. As a matter of fact, this unfavourable situation has been perceived as a social problem in countries such as Canada, England, Australia; and commissions have been established to investigate and prevent the aggression and violence in sports. Furthermore, countries such as USA, England, Canada, Australia, Germany, and Türkiye resort to judge and punish those acts aggressively in sports by way of courts (Tenenbaum et al., 1997). When the current literature is examined, it is seen that the concepts of aggression and sports are the subject of a lot of research. Some researchers have investigated the reasons of aggression in sports, and they have stated the factors which influence the aggression as mass media, fans, managers, trainers, family structure (Burton, 2005; Wann, 2005; Yücel et al., 2005), fanaticism, individual and collective immaturity (Lansford, 2018; Taştan, 2019; Taştan, 2022).

The notion of aggression in sports was subjected to studies like aggression levels of individuals who do and who do not participate in sports (Dervent et al., 2010), the elements that trigger athletes' aggressive behaviours (Donahue et al., 2009), the impacts of aggression tendency regarding the athletes' performances (Krishnaveni and Shahin, 2014), aggression levels of athletes who are handicapped and who are not (Açak and Kaya, 2015), aggression levels of athletes who participate in team or individual sports (Tutkun et al., 2010).

Sports by nature is based on inter-individual struggle within specific rules as both in team and individual sports. Athletes display high performances to gain victory. When sports branches such as Judo, Karate, Taekwondo, Kickboxing and Muay Thai are examined, where the level of physical contact is very high, aggressive behaviours that constitute a crime when done outside sports areas are legal and allowed within the scope of these combat sports. The basis of all these sport branches lies a set of actions which contain high aggressiveness and physical violence to get points from the opponent but not towards causing direct injuries. Therefore, the possibility of injury and harsh response for combat sport athletes are accepted to be inevitable (Krishnaveni and Shahin, 2014). Concordantly, it is important how much the sets of aggression containing behaviours that fall into the rules in combat sports affect the daily life and actions of the athletes who participate in those regarded sports branches. In the studies about combat sports and aggression that take part in literature (Ahmadi et al., 2011; Graczyk et al., 2010; Keeler, 2007), researchers mostly investigated the impacts of different types of sports on aggression level. A few numbers of studies which compare the combat sport athletes and sedentary individuals (Boostani and Boostani, 2012; Kuśnierz and Bartik, 2014) were encountered. In one of those studies, Kuśnierz and Bartik (2014) measured the aggression levels of jiu-jitsu, box and karate athletes and individuals who do not participate in sports; and presented their average aggression scores. In another study conducted by Boostani and Boostani (2012) aggression levels of kickbox, karate and swimming athletes and sedentary individuals were checked against; and kickboxers were found to be more assailant. However,

there was not any study encountered where the aggression levels of genders within combat sport athletes were evaluated and compared. In this study the aggression levels of male and female combat sport athletes (CSA) and sedentary individuals (SI) were examined by being contrasted in the context of physical aggression, hostility, verbal aggression, and anger sub dimensions.

METHODS

Research Model

The study design was based on the cross-sectional approach and the relational screening model of the general survey models.

Sample

The study group of this research was determined according to the accessible sampling technique, which is one of the non-random sampling methods. The sample group of the study was consisted of 104 combat sport athletes (Muay Thai, Boxing, Kickboxing, Taekwondo, Wushu, Karate, Wrestling) and 97 sedentary totally 201 participants. The mean of participants' age was 21.86 ±2.57 years.

Ethical Approval

All stages of this study were approved by the Ethics Committee of Human Research in Social Sciences.Ethical approval was received for this study from Bolu Abant İzzet Baysal University Human Research Ethics Committee on 10.05.2017 with protocol number 2017/165.

Instruments

As data collecting tool, Personal Information Form which was created by the researcher and "Buss Perry Aggression Questionnaire" (BPAQ) which was developed by Buss and Perry (1992) and adapted to Turkish by Madran Demirtaş (2012) were employed. The questionnaire was consisted of 4 sub-factors and 29 items graded by 5-point Likert scale (Very often: 5, Often: 4, Sometimes: 3, Almost never: 2 and Never: 1). The sub-factors were aligned as Physical Aggression (Item 2, 5, 8, 11, 13, 16, 22, 25 and 29), Hostility (Item 3, 7, 10, 15, 17, 20, 24 and 26), Anger (Item 1, 9, 12, 18, 19, 23 and 28) and Verbal Aggression (Item 4, 6, 14, 21 and 27). Items 9 and 16 were processed by reverse coding as they had negative values. The Cronbach Alpha internal consistency coefficient of the total scale was found as "0.84" within the scope of this study.

Data Collection Procedures

The study data were gathered by using face to face interview technique with questionnaire method. Before the data collection process was started, each participant was informed about the study and signed consent was obtained.

Statistical Analysis

At first the mean and the standard deviation of demographic characteristics and other measured data were calculated for statistical analysis. As a result of Shapiro Wilks test, it was noted that the collected data about the groups show normal distribution, and it was decided to apply the parametric hypothesis tests. Accordingly, Independent Sample t-test to compare the groups and

Pearson Correlation Coefficient test to determine the correlation between ungrouped data were performed. Significance level was accepted as $p \leq 0.05$ and statistical package for the social sciences (SPSS version 20.0) was used for the analysis of the data.

FINDINGS

Table 1. Results of the independent t test executed for the comparison of physical aggression scores

Group	n	Mean	Std. D.	df	t	p
CA	104	25.33	5.21	199	3.999	**0.001***
SD	97	22.38	5.23			
CA Female	40	24.35	6.07	95	3.066	**0.003***
SD Female	57	21.05	4.52			
CA Male	64	25.94	4.53	102	1.656	0.101
SD Male	40	24.28	5.63			
SD Male	40	24.28	5.63	95	3.121	**0.002***
SD Female	57	21.05	4.52			
CA Male	64	25.94	4.53	102	1.522	0.131
CA Female	40	24.35	6.07			

***p<0.05,** CS: Combat Athlete, SD: Sedentary

As shown in Table 1, significant difference was noted between the physical aggression scores of Combat Sport Athletes and Sedentary Individuals (t=3.99; p=0.001). After reviewing the means, it is seen that the mean score of combat sport athletes (25.33±5.21) was higher than the sedentary individuals (22.38±5.23). A significant difference was found between the physical aggression levels of female combat sport athletes and female sedentary individuals (t=3.066; p=0.003). After analysing the difference to see from which group the difference is originated, it was observed that the mean score of female combat sport athletes (24.35±6.07) was higher than the female sedentary individuals (21.05±4.52). It was determined that there is a significant difference between sedentary males and females on Physical Aggression sub-factor (t=3.121; p=0.002). Investigations on the difference show that the sedentary males' mean score (24.28±5.63) was higher than the females (21.05±4.52). This situation is clearly seen in the graph in Figure 1. On the other hand, no significant difference was found between the male combat sport athletes and female combat sport athletes (t=1.522; p=0.131) and between the male combat sport athletes and male sedentary individuals (t=1.656; p=0.101) with respect to physical aggression levels.

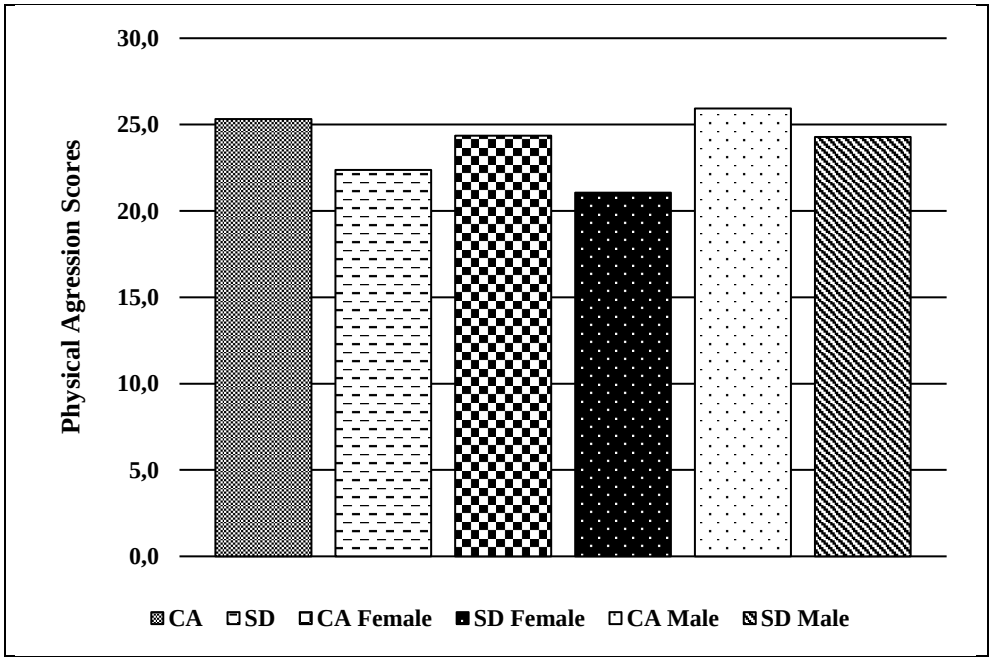
Table 2. Results of the independent t test executed for the comparison of verbal aggression scores

Group	n	Mean	Std. D.	df	t	p
CA	104	15.35	2.63	199	0.889	0.375
SD	97	14.98	3.20			
CA Female	40	15.00	2.79	95	0.000	1.000
SD Female	57	15.00	2.90			
CA Male	64	15.56	2.53	102	1.014	0.313
SD Male	40	14.95	3.63			
SD Male	40	14.95	3.63	95	-0.075	0.940
SD Female	57	15.00	2.90			
CA Male	64	15.56	2.53	102	1.061	0.291
CA Female	40	15.00	2.79			

CS: Combat Athlete, SD: Sedentary

As seen in Table 2, there was no significant difference between the verbal aggression scores of Combat Sports Athletes and Sedentary Individuals (t=0.89; p=0.375). There was no significant

difference between the verbal aggression levels of female combat athletes and sedentary female individuals (t=0.000; p=1.000). No significant difference was found between sedentary men and women in the verbal aggression sub-factor (t=1.014; p=0.313). On the other hand, no significant difference was found between male combat sports athletes and female combat sports athletes (t=1.061; p=0.940) and between male sedentaries and female sedentaries (t=-0.075; p=0.940) in terms of verbal aggression.



CA: Combat Athletes / SD: Sedentary

Figure 1. Physical aggression scores of participants

Table 3. Results of the independent t test executed for the comparison of hostility scores

Group	n	Mean	Std. D.	df	t	p
CA	104	23.34	4.97	199	-0.982	0.327
SD	97	24.08	5.80			
CA Female	40	23.33	4.91	95	-1.035	0.303
SD Female	57	24.60	6.59			
CA Male	64	23.34	5.04	102	-0.006	0.995
SD Male	40	23.35	4.41			
SD Male	40	23.35	4.41	95	-1.043	0.300
SD Female	57	24.60	6.59			
CA Male	64	23.34	5.04	102	0.019	0.985
CA Female	40	23.33	4.91			

As seen in Table 3, there was no significant difference between the Hostility scores of Combat Sports Athletes and Sedentary Individuals (t=0.982; p=0.327). There was no significant difference between the Hostility levels of female combat athletes and sedentary female individuals (t=-1.035; p=0.303). No significant difference was found between sedentary men and women in the Hostility sub-factor (t=-0.006; p=0.995). On the other hand, no significant difference was found between male combat sports athletes and female combat sports athletes (t=0.019; p=0.985) and between male sedentaries and female sedentaries (t=-1.043; p=0.300) in terms of Hostility.

Table 4. Results of the independent t test executed for the comparison of anger scores

Group	n	Mean	Std. D.	df	t	p
CA	104	21.06	4.07	199	-0.168	0.867
SD	97	21.15	4.09			
CA Female	40	20.68	4.35	95	-0.772	0.442
SD Female	57	21.39	4.54			
CA Male	64	21.30	3.91	102	0.631	0.530
SD Male	40	20.83	3.37			
SD Male	40	20.83	3.37	95	-0.663	0.509
SD Female	57	21.39	4.54			
CA Male	64	21.30	3.91	102	0.756	0.451
CA Female	40	20.68	4.35			

CS: Combat Athlete, SD: Sedentary

As seen in Table 4, there was no significant difference between the anger scores of Combat Sports Athletes and Sedentary Individuals (t=-0.168; p=0.867). There was no significant difference between the anger levels of female combat athletes and sedentary female individuals (t=-0.772; p=0.442). No significant difference was found between sedentary men and women in the anger sub-factor (t=-0.631; p=0.530). On the other hand, no significant difference was found between male combat sports athletes and female combat sports athletes (t=0.756; p=0.451) and between male sedentaries and female sedentaries (t=-0.663; p=0.509) in terms of anger.

Table 5. Results of the independent t test executed for the comparison of total aggression scores

Group	n	mean	Std	df	t	p
CA	104	85.07	13.04	199	1.306	0.193
SD	97	82.60	13.77			
CA Female	40	83.35	14.73	95	0.446	0.657
SD Female	57	82.04	13.99			
CA Male	64	86.14	11.87	102	1.083	0.281
SD Male	40	83.40	13.59			
SD Male	40	83.40	13.59	95	0.479	0.633
SD Female	57	82.04	13.99			
CA Male	64	86.14	11.87	102	1.062	0.291
CA Female	40	83.35	14.73			

CS: Combat Athlete, SD: Sedentary

As seen in Table 5, there was no significant difference between the total aggression scores of Combat Sports Athletes and Sedentary Individuals (t=-1.306; p=0.193). There was no significant difference between the total aggression levels of female combat athletes and sedentary female individuals (t=-0.446; p=0.657). No significant difference was found between sedentary men and women in the total aggression (t=1.083; p=0.281). On the other hand, no significant difference was found between male combat sports athletes and female combat sports athletes (t=1.062; p=0.291) and between male sedentaries and female sedentaries (t=0.479; p=0.633) in terms of total aggression.

In point of total aggression scores which contain all the sub-factors of the scale, no significant difference (p>0.05) was detected between Combat Sport Athletes and Sedentary Individuals and between genders (Table 5). No significant correlation was confirmed between combat sport athletes age or sports years and aggression sub-factors according to the Pearson correlation coefficient analysis.

DISCUSSION AND CONCLUSIONS

In compliance with the findings obtained from this study where the behaviours of combat sport athletes and sedentary individuals investigated, it was concluded that the physical aggression levels of combat sport athletes are significantly higher ($p<0.05$) than sedentary individuals. This acquired result coincides with the similar studies in the literature (Gedik, 2023; Gorsy & Muskan, 2023; İmamoğlu et al., 2020; Koç, 2022; Öztürk, 2019). When the results of the studies conducted by Dervent et al. (2010), Erşan et al., (2009) are examined, it was also ascertained that the physical aggression levels of individuals who participate in sports are higher in comparison to the ones who do not participate in any kind of sports. In one of their studies, Kuśnierz and Bartik (2014) examined the aggression levels of jiu-jitsu, boxing, karate athletes and sedentary individuals, and found out that their physical aggression levels line up from high to low in the order of jiu-jitsu athletes, sedentary individuals, boxing, and karate athletes. Boostani and Boostani (2012); in a study which was exercised on athletes of kickboxing, karate, swimming, and sedentary participants, they determined that physical aggression levels of kickboxing athletes are significantly higher than athletes of karate, swimming, and sedentary participants. Along with these studies, Krishnaveni and Shahin (2014) and Lotfian et al., (2011) stated as well that contact athletes who participate in combat sports which require close contact have a higher tendency of aggression and combat sport athletes implement some of the physically aggressive behaviours which they normally perform in sports activities- outside of the sports environments too, therefore their aggression levels are high. This diversity might be originated from the combat sport athletes' ability to easily apply the techniques that are aimed at defence and offence included in their respective sports branches and require physical strength. Because, for the reason of having high self-confidence, the athletes who possess this ability might not refrain from acting aggressively to overcome several physical challenges that they might encounter in social life.

In the sense of gender, when female combat sport athletes and sedentary females were compared in their own rights, it was designated that physical aggression level of female combat sport athletes are significantly higher ($p<0.05$) than their sedentary congerics' (Table 1). When the similar studies on the subject investigated (Akdağcık, et al., 2022; Gorsy & Muskan, 2023), it can be seen that Lenzi et al., (1997) reported that women who participate in sports are more aggressive than women who do not; and Özdemir and Akabay (2017) determined that female football players scored higher than female volleyball players on destructive aggression sub-dimension and emphasized that the reason to this outcome is the volleyball players' lack of direct contact with opponent, in other words, place switching of intended direct aggression with indirect aggression at some point. In another research, Çelik et al., (2017) emphasize that female students had higher scores on destructive aggression sub-factor of sportive high school players' aggressive behaviours. Santos et al., (2022) compared the aggression levels of female participants before and after e-sports. As a result of the study, it was determined that aggressive attitudes increased. Öcal (2007) found a significant difference between general aggression level of female volleyball players and female wrestlers in favour of wrestlers. When these results evaluated together, it can be said that every kind of sports are more or less being exercised by using physical strength, and physical aggression tendency of females who especially participate in combat sports and thereby think that they are making more of a physical effort higher than

females of sports branches which do not embody physical contact and also higher than sedentary females.

Comparison of the sedentary participants with respect to gender point out that physical aggression scores of sedentary males are significantly ($p<0.05$) higher than sedentary females (Table 1). In the studies conducted by Björkqvist (2017), Alp et al., (2014) and Bettencourt and Miller (1996), it was established that the aggression level of males were significantly higher than females. Acet et al., (2016) compared Taekwondo referees from the point of gender in their research and they come to a conclusion that destructive sub-dimension ratio of males' aggression inventory is higher than females. Scharf (2000) mentions that physical aggression is being used by males rather more. When all these results considered, it can be declared that sedentary males expose more aggressive behaviours than sedentary females due to being physically big and strong.

In summary, it was noted that there are significant differences between combat sport athletes and sedentary individuals, female combat sport athletes and sedentary females and, sedentary males and females in terms of physical aggression factor. In spite of that, regarding the physical aggression, no significant difference was found between male combat sport athletes and sedentary males, male combat sport athletes and female combat sport athletes. It is possible to interpret this situation as combat sports may increase the physical aggression levels of female participants. In other words, it is known that men are physically stronger than women and males are more self-confident and bolder compared to females in case of situations which require physical strength, on the contrary females behave more timidly in situations that involves the need for physical strength. However, the fact that higher physical aggression level of female combat sport athletes (24.35±6.07) compared to their sedentary congenerics' (21.05±4.52), that there was not any difference between male combat sport athletes (25.94±4.53) and female combat sport athletes (24.35±6.07), and between male combat sport athletes (25.94±4.53) and sedentary males (24.28±5.63) make us think that the differences in Table 1 derive from female combat sport athletes. For that matter, when the existing means considered, it is possible as well to say that reasons of the significant difference between combat sport athletes and sedentary individuals are that the physical aggression scores of female combat sport athletes were higher and sedentary females' scores were lower. This circumstance can be commented as males balance their substantial physical aggression levels through combat sports regardless of being sedentary or combat sport athlete, in other words combat sports do not affect physical aggressiveness of males; as for female combat sport athletes, in contrast with males and sedentary females they become more physically aggressive by gaining self confidence in terms of physical strength with the influence of combat sports. In the research conducted by Lenzi et al., (1997) and Rahimizadeh et al. (2011), it was found that women who participates in sports are more aggressive in comparison to women who do not participate in sports and there is not any significant difference between men who participate in sports and who do not with respect to direct aggression. It was sighted that the findings in this study overlap with the regarded literature.

In the present study, no correlation was found between the aggression level and the age and the sports years of individuals who practices combat sports. Investigations of the literature show that there was not any significant relationship between the age and sports year of athletes and

their aggression scores (Dervent et al., 2010; Donahue et al., 2009; Keeler, 2007; Kuśnierz and Bartik, 2014; Güvendi & Keskin, 2020; Akdağcık, 2022; Gedik, 2023). Also, analysis was conducted between the gender variable and hostility, verbal aggression, and anger sub-factors of aggression by trying all the combinations as combat sport athletes and sedentary individuals, sedentary females and males, female and male combat sport athletes, female combat sport athletes and sedentary females and male combat sport athletes and sedentary males; and no significant difference was encountered.

The result of not finding any difference regarding the anger levels of individuals with respect to gender variable in a study conducted about individuals who participates in sports and who do not by Üzüm et al., (2016) to coincide with the result of this study. Additionally, in research of Karagün and Çağlayan (2014), no difference was established regarding gender variable from point of view of hostility and anger. The results of this study and the other studies in literature happen to be supporting each other. It is thought that the reason of not finding any difference on sub-factors of the scale –which were mentioned above- besides the physical aggression sub-factor is based on the fact that the participants feel physically more competent and do not experience any difficulties when it comes to execution on account of the mentioned combat sports to be sport branches that require physical contact.

In conclusion, relying on the study results, it can be said that the physical aggression levels of individuals who participate in combat sports are higher compared to individuals who do not participate in combat sports, sedentary males are more aggressive than sedentary females with respect to gender variable, female combat sport athletes lean towards the physical aggression more than their sedentary congenerics and combat sports have an additive effect on physically aggressive behaviours of females.

Conflicts of Interest: The authors declare that they have no conflict of interest in relation to this manuscript.

Declaration of Researchers' Contribution Rate: Author/s' contribution to the research should be explained in this section. Research Design - ÜK(1) and NOY, Data Collection - NOY and HÜ, statistical analysis - ÜK(1), NOY and ÜK(2) Preparation of the article, ÜK, NOY, HÜ, ÜK.

Ethical Approval
Ethics Committee Name: Bolu Abant Izzet Baysal University Ethics Committee for Human Research in Social Sciences
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