ORIGINAL ARTICLE

The Effect of Musıc on the Performances of Taekwondo Athletes

ATALAY GACAR
[1]*Faculty of Physical Education and Sport Sciences,Firat University,Turkey*
Email: agacar@firat.edu.tr, Tel: +905056834045

ABSTRACT

It was observed that music is a tool that allows athletes to be motivated by relieving the pressure on the athletes before the competition in the researches. Based on these thoughts, in our research; It is aimed to examine the level of effect of music in the performances of taekwondo athletes. Within the scope of our research, 1206 athletes who were selected by random method from athletes engaged in taekwondo sports in Turkey were reached. Due to the pandemic affecting the whole world, the process of transmitting and filling scales to athletes was carried out by online survey method conducted through www.onlineanketler.com. In our study, the Personal Information form consisting of 5 articles and the Effect of Music scale in Sports Practices consisting of 18 articles and 3 sub-dimensions which developed by Karayol and Turhan was used in order to determine the demographic information of the athletes. IBM SPSS 22 package program was used in the analysis of the data obtained. It was accepted that the data showed a normal distribution by looking at the skewness and kurtosis values of the scales. Independent samples t test was used for paired comparisons and One Way Anova analysis was used for multiple comparisons in the study. The error level in the study was taken as $p < 0.05$. It was determined that there was no statistically significant difference between the sub-dimension scores of the effect of music in sports practices and the sports year variable depending on the sports year variable of the athletes engaged in taekwondo sport in Turkey ($p > 0.05$). Statistically significant differences were found in terms of sub-dimension scores and general scores of the scale depending on gender, age, educational status and type of music being listened to ($p<0.05$). It was observed that the effect of music in sports practices was higher than the average, with a score of 4.05 for the effect of music, 3.93 for psychological resilience, 3.99 for the physical strength and performance sub-dimension, and 4.23 for the motivation sub-dimension in line with the findings of the study.

Key Words: Athlete, Taekwondo, Music, Performance

INTRODUCTION

Taekwondo is the oldest and most well-known sport in the world. Considering the history of this sport branch, it has an old history until the 7th century BC. People have the instinct of self-defense as well as meeting their social needs. In ancient times, people made many movements to defend themselves against danger. As a result of these movements, some sports have emerged or been associated with them today (Mavi, 2012).

Taekwondo word emerged from the combination of three words. Tae explains foot techniques, Kwon hand techniques, and do explains the moral aspect of sport. Considering the most important characteristics of individuals who do Taekwondo sport, their self-confidence is that they can make themselves accepted in the society and express themselves better to the society. It is observed that individuals who start taekwondo sport at a young age are more self-confident than other children during the education period (Tel, 2000).

Taekwondo sport is a sport that contains a lot of motivational factors. Some factors are very important to succeed in this sport. In addition to the techniques and tactics specific to the branch, the suitability of physical competence and anthropometric structure is very valuable on the road to success. During the competition, taekwondo athletes are required to hit the opponent's score zone with kicks and punches. They need to make a lot of effort during these strokes (İmamoğlu, 2010).

Some theories have been put forward for Taekwondo athletes to be able to withstand and be motivated by intense training pace. Among the factors influencing success in sports, the idea of listening to music during training was first revealed by scientists abroad. Music is a branch of art that has influenced mankind both emotionally and intellectually since ancient times. Music has become an indispensable element of our lives and maintains its importance today (Atılgan, 2005). Music will relieve the pressure on athletes before the competition and provide more motivation for what they will do (Karahüseyinoğlu, 2020). In this way, the athletes will be better motivated to do what they will do by not feeling pressure on them during the competition. We can think that the athlete will feel more safe, especially when we think that he will bring the feeling of excitement to lower levels in the mind (Stevens, 2001).

It has been proven by various studies that music positively affects performance. As a result of these studies, it is said that athletes competing in various branches have a positive effect on the results of the competition. Since it is thought that taekwondo athletes who consist the universe of our study will positively affect the performance of taekwondo athletes along with the sense of defense and confidence that forms the basis of this sport, it is aimed to examine the level of effect of music in the performances of taekwondo athletes.

MATERIAL AND METHOD

The universe of our study consists of athletes engaged in taekwondo sports in Turkey, while the sample consists of 1206 athletes selected by random method. Due to the pandemic affecting the whole world, the process of transmitting and filling scales to athletes was carried out by online survey method conducted through www.onlineanketler.com.

In our study, in order to determine the demographic information of the athletes, the Personal Information form (Gender, Age, Educational Status, Sports Year, and the

Type of Music Listened) and the Scale of the Effect of Music on Sports Practices developed by Karayol and Turhan were used. The scale consists of 18 items and 3 sub-dimensions. The scale is 5-point Likert type. There are no Inverse (negative) substances on the scale. The motivation sub-dimension of the scale consists of questions 1, 2, 3, 4, and 5, the physical strength and performance sub-dimension consists of questions 6, 7, 8, 9, 10, and 11, and the psychological resilience sub-dimension consists of questions 12,13,14,15,16,17 and 18. The sum of the points to be obtained from the scale indicates that the effect of music is positive at the high end and that the effect of music is negative at the low end. Reliability analysis was applied to the scale of the effect of music in sports practices and Alpha coefficient was found to be 0.885. According to Nunnally (1978), the scale is reliable because the lower limit of reliability is 0.70.

Analysıs of Data: IBM SPSS 22 package program was used in the analysis of the data obtained. It was determined that the scales were skewness and kurtosis values between -1 and +1. The fact that these values are in the range of -1 and +1 has been interpreted as parametric research data (Büyüköztürk, 2007). In this context, it has been accepted that the data shows normal distribution.

Independent samples T-test was used for paired comparisons and One Way Anova analysis was used for multiple comparisons in the study. The error level in the study was taken as $p < 0.05$.

Fındıngs: In this part of our study, the distribution of Taekwondo athletes according to their personal characteristics is determined and the effect of music is interpreted by showing the average points in tables.

Table 1. Comparison of the sub-dimensions of the Effect of Music on Sports Practices Scale according to the gender variable of the subjects participating in the study

	Gender	N	X	Ss	t	p
Psychological Resilience	Male	570	3,73	,91	-7,10	,00
	Female	636	4,10	,89		
Physical Strength and Performance	Male	570	3,84	,92	-5,54	,00
	Female	636	4,13	,89		
Motivation	Male	570	4,08	,90	-5,74	,00
	Female	636	4,36	,81		
Scale of the Effect of Music in Sports Practices	Male	570	3,88	,86	-6,42	,00
	Female	636	4,20	,83		

It was determined that there was a statistically significant difference between the sub-dimension scores of the effect of music in sports practices scale and the gender variable ($p < 0.05$) when table 1 was examined.

It was determined that there was no statistically significant difference between the psychological resilience sub-dimension scores of the effect of music in sports practices scale and the age variable ($p > 0.05$) when Table 2 was examined. It was determined that there was a statistically significant difference between the group aged 9-15 years and the group aged 20 and older in the general score, physical strength and performance sub-dimension, and motivational sub-dimension of the participants in sports practices ($p<0.05$).

Table 2. Comparison of the sub-dimensions of the Effect of Music on Sports Practices Scale according to the age variable of the subjects participating in the study

	Age	N	X	Ss	F	p
Psychological Resilience	9-15 Years	399	3,85	,90	2,61	,06
	16-19 Years	471	3,94	,94		
	20 Years and Older	336	4,01	,90		
	Total	1206	3,93	,92		
Physical Strength and Performance	9-15 Years^{A}	399	3,92	,91	3,45	,03*
	16-19 Years^{B}	471	3,99	,94		
	20 Years and Older^{C}	336	4,09	,87		
	Total	1206	3,99	,91		
Motivation	9-15 Years^{A}	399	4,16	,85	3,40	,03*
	16-19 Years^{B}	471	4,22	,91		
	20 Years and Older^{C}	336	4,33	,82		
	Total	1206	4,23	,87		
Scale of the Effect of Sports Music in Practices	9-15 Years^{A}	399	3,97	,85	3,42	,03*
	16-19 Years^{B}	471	4,05	,89		
	20 Years and Older^{C}	336	4,14	,81		
	Total	1206	4,05	,86		

Table 3. Comparison of the sub-dimensions of the Effect of Music on Sports Practices Scale according to the educational status of the subjects participating in the study

	Education status	N	X	Ss	F	p
Psychological Resilience	Elementary school^{A}	117	3,76	,92	5,81	,001*
	High school^{B}	701	3,89	,92		
	Associate degree^{C}	96	4,25	,87		
	Undergraduate^{D}	291	3,98	,89		
	Total	1205	3,93	,91		
Physical Strength and Performance	Elementary school^{A}	117	3,86	,97	4,38	,004*
	High school^{B}	701	3,96	,91		
	Associate degree^{C}	96	4,26	,89		
	Undergraduate^{D}	291	4,06	,87		
	Total	1205	4,00	,91		
Motivation	Elementary school^{A}	117	4,05	,86	6,56	,000*
	High school^{B}	701	4,18	,89		
	Associate degree^{C}	96	4,38	,81		
	Undergraduate^{D}	291	4,38	,79		
	Total	1205	4,23	,86		
Scale of the Effect of Music in Sports Practices	Elementary school^{A}	117	3,89	,89	5,52	,001*
	High school^{B}	701	4,01	,87		
	Associate degree^{C}	96	4,29	,81		
	Undergraduate^{D}	291	4,14	,80		
	Total	1205	4,05	,86		

When Table 3 is examined; It was determined that there was a statistically significant difference between

those with an associate's degree and those with primary and high school education($p < 0.05$) when the participants' scores of the 'effect of music scale psychological resilience sub-dimension and 'physical strength and performance' sub-dimension scores in the sports practices of the participants were examined. When the general score of the participants on the effect of music in sport practices and the education status variable are examined;

It was determined that there was a statistically significant difference between athletes at the elementary school level and athletes at the associate and undergraduate level, as well as between high school athletes and athletes at the associate degree level ($p<0.05$). When the motivation sub-dimension of the scale of the effect of music on the sports practices of the participants and the educational status variable was examined, it was determined that there was a statistically significant difference between the athletes at the primary school level with the athletes at the associate and undergraduate level, as well as between the athletes at the high school level and the athletes at the associate degree level ($p < 0.05$)

Table 4. Comparison of the sub-dimensions of the Effect of Music on Sports Practices Scale according to the sports year variable of the subjects participating in the study

	Sports Year	N	X	Ss	F	p
Psychological Resilience	1-5 Years	438	3,90	,93	,27	,76
	6-9 Years	408	3,94	,86		
	10 Years and above	360	3,95	,96		
	Total	1206	3,93	,92		
Physical and Strength Performance	1-5 Years	438	3,97	,93	,37	,68
	6-9 Years	408	3,99	,86		
	10 Years and above	360	4,02	,94		
	Total	1206	3,99	,91		
Motivation	1-5 Years	438	4,19	,88	,81	,44
	6-9 Years	408	4,27	,82		
	10 Years and above	360	4,24	,91		
	Total	1206	4,23	,87		
Scale of the Effect of Music in Sports Practices	1-5 Years	438	4,02	,88	,41	,66
	6-9 Years	408	4,07	,80		
	10 Years and above	360	4,07	,89		
	Total	1206	4,05	,86		

When table 4 was examined, it was determined that there was no statistically significant difference between the sub-dimension scores of the effect of music in sports practices and the variable of the year of sports ($p>0.05$).

In Table 5, when the psychological resilience sub-dimension scores of the effect of music in sports practices scale and the general scores of the scale and the type of music listened to the variable are examined; It was determined that there is a statistically significant difference between those who listen to foreign and local music and those who listen to both together ($p < 0.05$). When the participants' musical effect scale in sports practices was examined with scores of physical strength, performance, and motivation sub-dimensions and the music type variable listened to, it was determined that there was a statistically significant difference between those who listened to foreign music and those who listened to local music ($p<0.05$).

Table 5. Comparison of the Sub-dimensions of the Effect of Music on Sports Practices Scale according to the variable of music type of the subjects participating in the study

	Music Type	N	X	Ss	F	p
Psychological Resilience	Local music[A]	480	3,83	,96	8,99	,000*
	Foreign music[B]	234	4,14	,93		
	Local and Yabancı music[C]	492	3,92	,85		
	Total	1206	3,93	,92		
Physical and Strength Performance	Local music[A]	480	3,94	,97	3,93	,020*
	Foreign music[B]	234	4,14	,90		
	Local and Foreign music[C]	492	3,98	,86		
	Total	1206	3,99	,91		
Motivation	Local music[A]	480	4,15	,88	5,36	,005*
	Foreign music[B]	234	4,38	,82		
	Local and Foreign music[C]	492	4,23	,88		
	Total	1206	4,23	,87		
Scale of the Effect of Music in Sports	Local music[A]	480	3,97	,89	6,42	,002*
	Foreign[B]	234	4,22	,85		
	Local and Foreign music[C]	492	4,04	,82		
	Total	1206	4,05	,86		

DISCUSSION AND CONCLUSION

In this part of the study, the results of taekwondo athletes who participated in the study were discussed and interpreted regarding whether the levels of influence of music in sports practices differed according to some variables.

It was determined that there was a statistically significant difference between the sub-dimension scores of the effect of music and the gender variable in sportive practices ($p<0.05$). When the score levels of female athletes are examined, it is seen that they are higher than male athletes. In a different way, the performances of female athletes can be increased to higher levels with the influence of music than male athletes. Szabo et al. (1999) conducted a study on the effect of the rhythm of the music on cycling exercise. 12 male and 12 female cycling athletes participated in their work. Pre-test and post-test analyses carried out in this study, it has been mentioned that music delays the body's level of internal fatigue and also improves performance.

It was determined that there was no statistically significant difference between the psychological resilience sub-dimension scores of the effect of music in sports practices and the age variable of the participants participating in the study ($p> 0.05$). It was determined that there is a statistically significant difference between the group between the ages of 9-15 and the group between the ages of 20 and older in the scale of the effect of music in the sports practices of the participants, general score, physical strength, performance, and motivation sub-dimension ($p < 0.05$). It is seen that the performance level scores of older athletes increase with the influence of music. Matesic (2002) made a running test to students between the ages of 18-23 by listening to music. According to this study, a decrease in perceived effort was observed in running while listening to music. This is a work that supports our work.

It was determined that there was a statistically significant difference between those with an associate's degree and those with elementary and high school education($p < 0.05$) when the scale of the effect of music in sports practices, psychological resilience sub-dimension scores, physical strength, and performance sub-dimension scores and the educational status variable of the participants participating in the study were examined. When the scale of the effect of music in the sports practices of the participants and educational status variable was examined, it was determined that there was a statistically significant difference between the athletes at the elementary school level and the athletes at the associate degree and undergraduate level, as well as between the athletes at the high school level and the athletes at the associate degree level ($p < 0.05$). When all the sub-dimensions are examined in detail, it is stand out that the effect of music in sports practices of associate students is higher in their score levels. This issue could not be discussed since there are no different studies on the variable in the literature.

It was determined that there was no statistically significant difference between the sub-dimension scores of the effect of music in sports practices of the participants participating in the study and the sport year variable ($p > 0.05$). When the table findings were examined in detail, it was observed that individuals with sports backgrounds between 6-9 years in the sub-dimension of motivation had higher music effect scores. It is seen that the average score increases as the being athlete year increases in the average score of other sub-dimensions and scale. However, despite all this data, it is clear that the data averages do not reveal any statistically significant results. This issue could not be discussed since there are no different studies on the variable in the literature.

It was determined that there was a statistically significant difference between those who listen to foreign music and those who listen to local music and those who listen to both together ($p < 0.05$) when the scale of the effect of music in sports practices, psychological resilience sub-dimension scores, and the general scores of the scale of the participants in the study was examined. When the scale of the effect of music in sports practices scale, physical strength, performance, and motivation sub-dimension scores of the participants and the type of music variable were examined, it was determined that there was a statistically significant difference between those who listen to foreign music and those who listen to local music ($p < 0.05$). Although there are few studies in the literature that have examined music and sports subjects intertwined, Kartal and Ergin's (2018) study found that athletes contributed to their performances in the music they listened to voluntarily.

As a result; It was determined that there was no statistically significant difference between the sub-dimension scores of the effect of music in sports practices and the sports year variable depending on the variable of the year of sports of athletes engaged in taekwondo sports in Turkey ($p > 0.05$). Depending on the gender, age, educational status and the type of music listened to, it was determined that statistically significant differences occurred in terms of the sub-dimension scores of the effect of music in sports practices and the overall scores of the scale ($p < 0.05$). It was observed that the effect of music in sports practices was higher than the average, with a score of 4.05 for the effect of music, 3.93 for psychological resilience, 3.99 for the physical strength and performance sub-dimension, and 4.23 for the motivation sub-dimension in line with the findings of the study.

It is imperative that athletes are always ready regardless of physical and strength. However, when we look at the recent studies with performance and the major sports clubs that are currently available, it is seen that the importance of sports psychology is quite high. Although awards and punishments are very important in sports psychology, they affect the performance of the athlete in many relaxing and mind-relaxing external influences such as music in order for the athlete to be mentally ready. It was observed with scale score averages where the performance of athletes will increase due to the influence of music in our study. Since there are not many studies in the literature that reconcile music and sports subjects, it was deemed necessary to do this study. It is thought that the results of the study findings will contribute to sports scientists, sports psychologists, coaches and sports scientists working in this field. In the discussion section of our research, not many sources were reached due to the lack of the desired level of work in the literature on the subject. It can be said that the research will contribute to field writing in this aspect.

REFERENCES

1. Mavi, S. (2012). Effects of Fast Tempo Music on Taekwondo players. Department of Sports Education Sciences. Master's Thesis. Ankara.
2. Tel, M., Öcalan, M., and Yaman, M. (2000). Reasons and Socio-Economic Status of Taekwondo players to Prefer This Sport, Selçuk University Journal of Physical Education and Sports Sciences, 2: 1-9.
3. İmamoğlu, O., Açak, M., and Bayram, L., (2010). Investigation of the Impact of Some Changes to Taekwondo Competition Rules on Techniques Used from Competitions. Journal of Sports and Performance Researches.1: 30-37.
4. Atılgan, O.E., and Pınar, S., (2005). Evaluation of the Effect of Rhythm Training on Complex Gymnastics. Gazi Journal of Physical Education and Sports Sciences, 2:11-24.
5. Karahuseyinoglu, M. F., Altungul, O., Nacar, E., and Tutar, O. F. (2020). Examination of the Levels of Digital Game Dependency of the Students of the Faculty of Sports. Asian Journal of Education and Training, 6(1), 18-22.
6. Stevens, M.J. and Lane, A.M., (2001). Mood-Regulating Strategies Used By Athletes, Athletic Inside, The Online Journal of Sport Pychology, 3: 3-10
7. Karayol, M., and Turhan, M. O. (2020). Impact of Music in Sportive Activities Scale (IMSAS): Validity and reliability assessment. *African Educational Research Journal,* *8*(2), 297-304. https://doi.org/10.30918/AERJ.82.20.071
8. Nunnally, J. C. (1978). Psychometric Theory (2. b.). New York: McGraw-Hill.
9. Szabo, A., Small, A., and Leigh, M. (1999). The Effects of Slow and Fast Rhythm Classical Music on Progressive Cycling to Voluntary Physical Exhaustion. Journal of Sports Medicine and Physical Fitness, 39: 220-225.
10. Matesıc, B. (2002) .Effects Music Has on Lap Pace ,Heart Rate and Perceived Exertion Rate During. United States Sport Academy. Alabama. Web: (http://www.thesportjournal.org). Retrieved August 10 2011.
11. Kartal, A., and Ergin, E. (2018). Examination of the effect of different tempo music on aerobic and anaerobic performance in footballers. Sports meter Magazine, 16(3), 149-157.