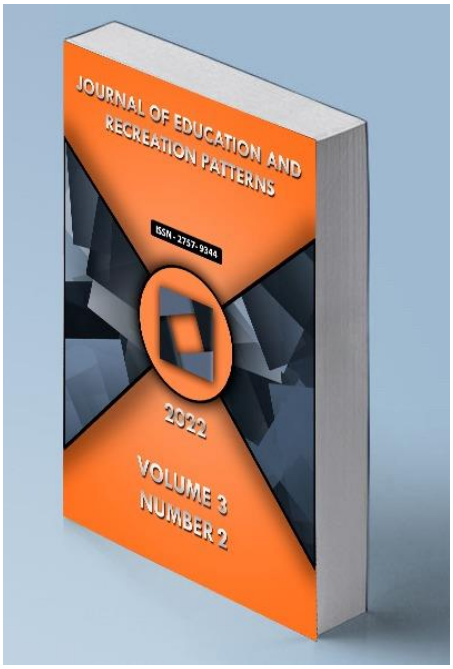

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Weapon Control Analysis and Evaluation of Fencing Athletes Participating in Islamic Solidarity Games

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ABSTRACT
The aim of this research was the control analysis of fencing equipment that the fencers having participated in the 5th Islamic Solidarity Games organized in our country between 14-17 August 2022 used within the competition and delivered to the official weapon control unit, and assessment and interpretation of this analysis. The research group is composed of 125 athletes who participated in the 5th Islamic Solidarity Games from 14 different countries. Within the scope of the research, weapon control result forms of 125 athletes who participated in the 5th Islamic Solidarity Games were assessed with the support and permission of the Turkish Fencing Federation. The data obtained from weapon control result forms were firstly categorized for online processing. During the analysis process, a data analysis program called MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. The data obtained from weapon control result forms were described with percentage and frequency values. Within the scope of the research, it was found that the percentage values of some of the equipment of 125 fencers who participated in the 5th Islamic Solidarity Games and made up sampling group that could not get the seal of certification after weapon control were high. These are body wires with the rates of 19,5% and 14% and epee weapon with the rate of 12,5%. The International Fencing Federation made a new arrangement in Articles 18, 29 and 31 of instructions of material use and published a regulation relating to the requirement that wire plugs of body wires should be transparent and guard socket of epee should be double-hole. Within the scope of the research, it can be said that the high percentage values of some equipment that couldn't get the seal of certification resulted from lack of information about this regulation.

Keywords: Fencing Weapon Control, Islamic Solidarity Games, Sport

INTRODUCTION

Sword fight has been existing for more than 2000 years. It was applied in many forms in different cultures. Although it was associated with survival, domination and conquest efforts at the beginning, it has existed as a sports branch since ancient Egypt, it has become popular in Europe with the spreading of the tournaments in which spears and swords were used in the Middle Age (Murgu, 2006).

Modern fencing was accepted to the first modern Olympic games taking place in Athens (1896) and included in the games (Roi & Bianchedi, 2008). Fencing, one of a few branches in each of Modern Olympic Games, is one of the sports branches in which perceptual and psychomotor qualities are used at the highest level (Turner et al., 2013). Modern fencing is composed of preparation for a fight and competition between two rivals armed equally with traditional weapons, with an athletic performance, according to certain rules. The aim of this sportive combat can be defined as to score on one's opponent the maximum number of conventional hits or thrusts, in a given time, while attempting to avoid being hit oneself, or at least to receive as few hits as possible (Czajkowski, 2011).

In fencing, along with physical abilities such as attention, speed and endurance and judgment ability, mental qualities called as immediate decision-making and success determination should work in a combined and harmonious manner (Tümlü, 2009). When it comes to sports, the first thing coming to the mind is a situation in which physical skills come into prominence; however, in fencing, in addition to basic motor skills or training of the athlete, some factors also affect success of the athletes (Kalkan & Zekioğlu, 2017). These factors may include effective factors in different categories such as external environment based stress, decisions of the referee, effects of trainer and etc. In addition to the abovementioned athlete-dependent sportive performance and effects of external environment, it can be said that another effective factor in fencing sport is fencing equipment. Fencing jackets, masks, other protective equipment, electrical fencing weapons, conductive vests and body wires used by the athletes individually can be shown as an example to this equipment. The international fencing federation (FIE) applies a set of measures and rules both for safety of athletes and to prevent advantages and disadvantages. These rules are given clearly in official rules and instructions. These measures are applied not only internationally but also by many countries in national organizations. Semi commission of international fencing federation is the body authorized to make regulations about safety of fencing materials, their suitability for competitions and detailed rules (FIE, 2022). Also in our country, "Safety of Equipment and Material Control Instructions" are applied by the Turkish Fencing Federation (TFF) for the sake of use of fencing materials and sustainability of safe fencing (TFF, 2022).

Before international competitions, all fencers are obliged to have their materials controlled. A special site within the competition area is determined as ''Weapon Control'' site. In this site, the officials and commission members assigned by FIE or regional competent federations carry out this control process. Many equipments are subject to different control rules. These rules are as follows with simple images (FIE, 2022).

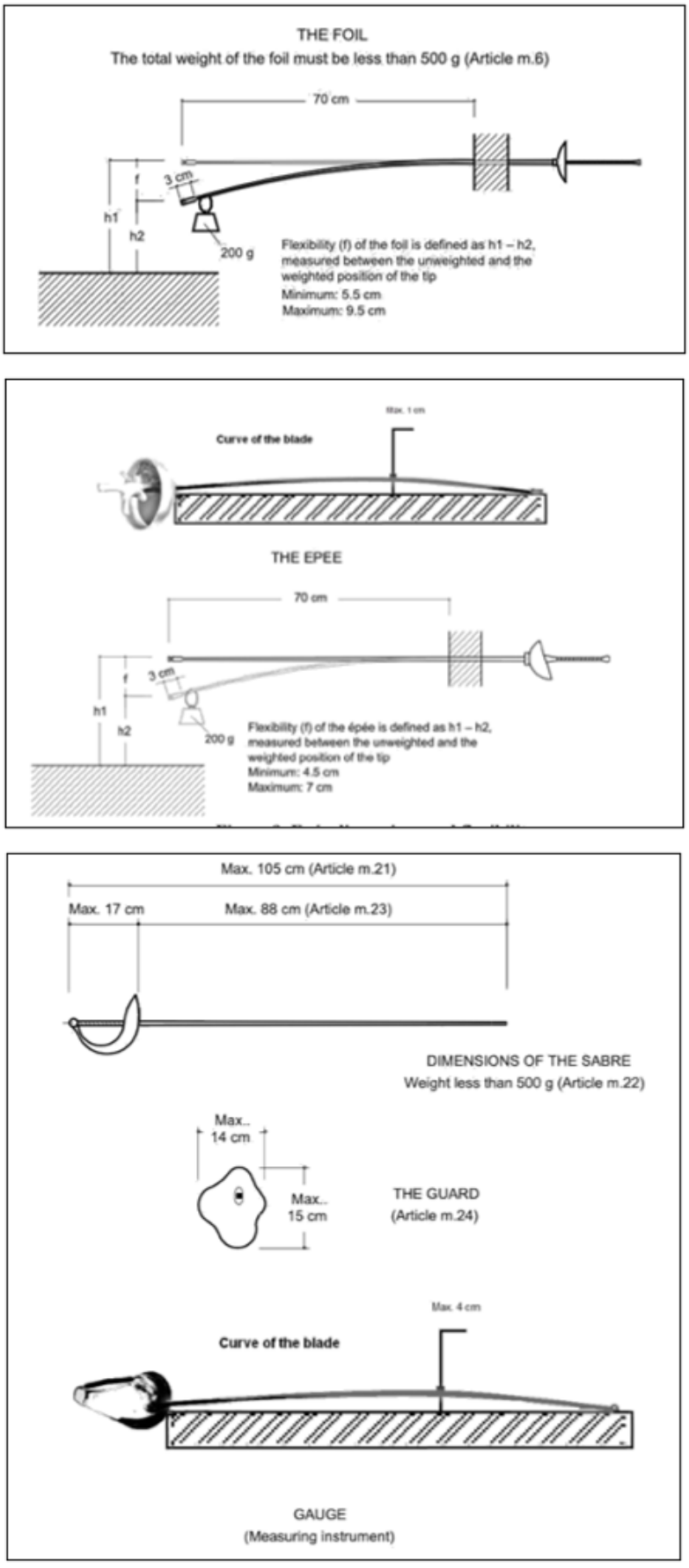

Figure 1. Fencing weapons control rules.

In fencing, three different weapon types have features different from each other (Abdollah et al., 2014). The fencing weapons included in many different control processes such as flexibility, length of weapons, handle dimensions and guard dimensions are one of the most important materials for the athletes.

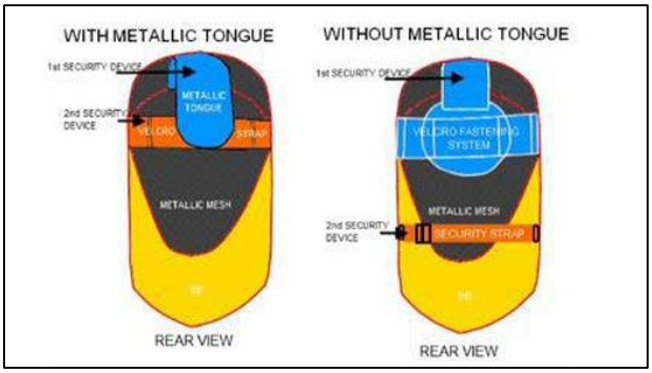

Figure 2. Fencing mask control rules.

In accordance with the decisions taken by the semi commission on fencing masks, it was decided that the protective belt behind the mask has double-sided protective safety and this apparatus is provided by authorized suppliers. Furthermore, the masks to be used in international fencing competitions should be resistant to 1600 Newton pressure. During the control process, it is also controlled whether the masks are resistant to penetration pressure of 12 kg with a special stapler (Harmer, 2008).

The main three fabric parts of fencing equipment are called as fencing jacket, fencing pants and plastron. The material manufacturers are liable to control whether fencing clothes have durability and strength to a certain degree (Beskin & Halavska, 2017). Use of clothes without valid certification mark in international organizations is not possible. According to the new regulation of the international fencing federation, the fencing clothes will be followed with a chip. Thanks to this chip, it will be possible to reach information such as type and manufacturer of the fencing clothes electronically and in a mobile way.

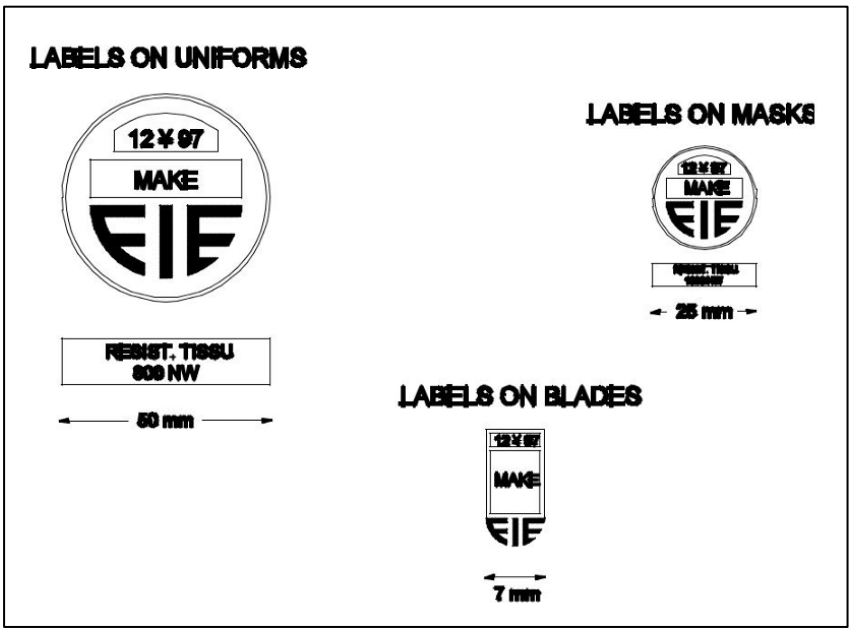

Figure 3. Fie Quality Labels.

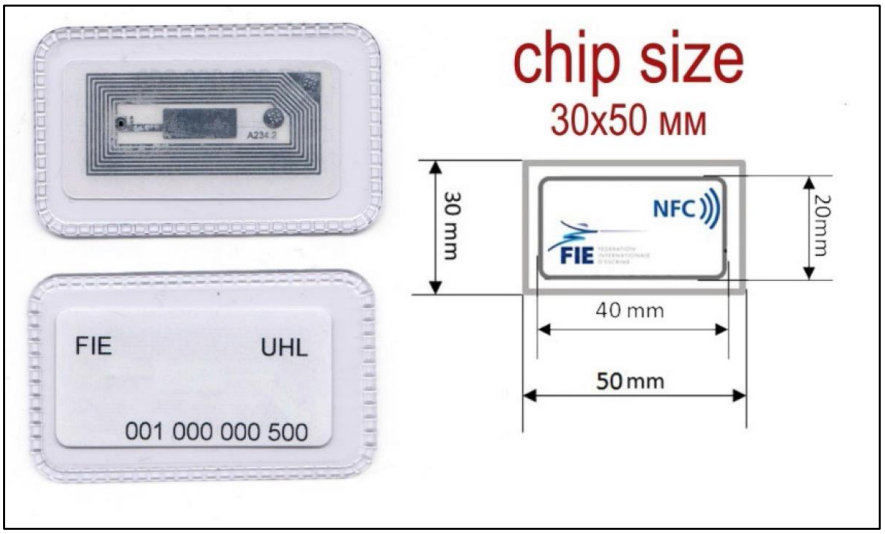

Figure 4. Fencing Clothing Chip.

Fencing clothes and other necessary electronic equipment are offered to the use of athletes after a very detailed safety control process. The fencers who want to increase their sportive performance to the highest level have the responsibility that their materials are sound and have desired requirements. It is not possible for the athletes to compete in international competitions with the fencing materials which haven't completed the weapon control process.

Islamic Solidarity Games

Islam teaches showing respect of people to each other, honoring each other, taking care of each other, mutual collaboration, helping each other, making collaboration in goodness, encouraging solidarity and sharing both in good and bad conditions (Sofyan et al., 2021). In this respect, The Organization of Islamic Cooperation (OIC) was founded in 1969 in order to gather Islam countries under a single roof and to protect interests of Islamic world (OIC, 2022). The Islamic Solidarity Games is a large-scale sports organization in which the member countries of the organization participate and which is held in every four years. The first of Islamic Solidarity Games was held in Jeddah in 2005, the third in Indonesia in 2013, the fourth in Azerbaijan in 2017, and the fifth was planned to be held in 2021, but because of the pandemic, it was held in Konya in 2022 (ISSF, 2022).

METHOD

Within the scope of the research, it was aimed to make a control analysis of fencing equipment that the fencers having participated in the 5th Islamic Solidarity Games organized in our country between 14-17 August 2022 used within the competition and delivered to official weapon control table. The research group is composed of 125 athletes who participated in the 5th Islamic Solidarity Games from 14 different countries. In order to reach the data used in research analysis, 5th Islamic Solidarity Games Weapon Control Form of the Turkish Fencing Federation the was used. This form is attached herein, and forms of some participants were excluded from the research as they had different markings on them. The data obtained from weapon control result forms were firstly categorized for online processing. During the analysis process, a data analysis program called MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. The data obtained from weapon control result forms were described with percentage and frequency values. For this study, approval of Selçuk University Non-Invasive Clinical Researches Ethics Committee was obtained (E.379034). Furthermore, for the data to be used in the content of the

study, permission was obtained from the Turkish Fencing Federation (E-41112846-125.99-3432499).

FINDINGS

When Table 1 was examined, it was tried to explain in details distribution of fencers who participated in the 5th Islamic Solidarity Games held in Konya between 14-17 August 2022 according to their countries.

Table 1. Weapons Control Status of Islamic Solidarity Games Country Participants*

	Countries	Participants Frequance	Percent
1	Azerbaijan	8	%6,4
2	Bangladesh	3	%2,4
3	Iran	17	%13,6
4	Jordan	3	%5,6
5	Kazakhstan	1	%0,8
6	Kyrgyzstan	5	%4
7	Lebanon	6	%4,8
8	Mali	3	%2,4
9	Qatar	6	%4,8
10	Saudi Arabia	16	%12,8
11	Republic of Senegal	6	%4,8
12	Turkey	22	%17,6
13	Uzbekistan	23	%18,4
14	Yemen	2	%1,6
Total		125	%100

* Some participants were excluded from the research because their weapons control data were not sufficient.

Table 2. Total Number of Equipment Given to Weapon Control by Fencers Participating in Islamic Solidarity Games

Epee	137
Foil	111
Sabre	91
Body Wire (Foil- Sabre)	197
Body Wire (Epee)	123
Mask Wire	159
Foil Lame	50
Sabre Lame	59
Breeches	125
Plastron	128
Jacket	125
Foil, Epee Glove	112
Sabre Glove	61
Epee Mask	43
Foil Mask	41
Sabre Mask	47

Table 3. Weapon Control Result Equipment Status of Fencers Participating in Islamic Solidarity Games

	Total	Total Percent	Pass	Pass Percent	Fail	Fail Percent
Epee	48	%100	42	% 87,5	6	% 12,5
Foil	34	%100	33	% 97,1	1	% 2,9
Sabre	41	%100	38	% 92,7	3	% 7,3
Body Wire (Foil- Sabre)	82	%100	66	% 80,5	16	% 19,5
Body Wire (Epee)	50	%100	43	% 86	7	% 14
Mask Wire	76	%100	72	% 94,7	4	% 5,3
Foil Lame	36	%100	33	% 91,6	3	% 8,4
Sabre Lame	43	%100	39	% 90,7	4	% 9,3
Breeches	115	%100	113	% 98,3	2	% 1,7
Plastron	116	%100	115	% 99,1	1	% 0,9
Jacket	119	%100	117	% 98,3	2	% 1,7
Foil, Epee Glove	77	%100	74	% 96,1	3	% 3,9
Sabre Glove	45	%100	40	% 88,9	5	% 2,1
Epee Mask	40	%100	36	% 90	4	% 10
Foil Mask	36	%100	32	% 88,9	4	% 2,1
Sabre Mask	43	%100	42	% 97,6	1	% 2,4

Table 3 gave the numbers of equipment which obtained and did not obtain certification for use after the control among the fencing equipment controlled in the weapon control unit. It was seen that the equipment numbers of which are given in Table 1 and Table 2 were different from each other. This difference stems from the fact that the data given in Table 3 is regarded singular in every equipment type. Furthermore, body wires lead the first with the rates of 19,5% and 14% among the materials which did not obtain seal of certification after the control of equipment of fencers. Also, epee weapon is placed on the top with the rate of 12,5% among the fencing weapons which did not obtain seal of certification.

DISCUSSION AND CONCLUSION

When the historical process of fencing is evaluated, it would not be a mistake to say that its foundations were laid in antique periods. We see that fencing which has been included in Olympic games since the first modern Olympics until now has renewed itself both technologically and tactically. However, it can be said that the researches on fencing do not have sufficient variety relatively (Mcdow, 2009). But, it is possible to encounter many researches aiming analysis and development of fencing equipment at different levels; examples of existing studies may include the analysis of fencing clothes with the aid of pressure sensors with a smart layer by Vieira et al., (2021), the research done by Kokochashvili, (2016) about fencing weapon handles and other equipment, the research done by Smolkin, (2019) which includes analysis of fencing score machines and recommendation of a different prototype, the research done by Santos, (2008) in which high technology opportunities in fencing are assessed and even the congresses made in this respect.

There are no sufficient studies in the field concerning weapon control process results analyzed within the scope of the research. Although there are many researches on revision or development of many fencing equipments in the light of technological advancements, a comprehensive research relating to what type of equipment the athletes have problems

generally will contribute to taking measures and being careful for fencers, trainers and other relevant individuals. FIE Semi Commission is liable to announce new decisions and amendments to the athletes and other sports members. While the innovations sometimes enable the athletes to use their own materials with simple revisions, they may sometimes include complete replacement of the relevant part by authorized service or supplier. It can be said that some innovations made by FIE after the pandemic have affected the result of the research analysis. Within the scope of the research, it was found that percentage values of some of the equipment of 125 fencers who participated in the 5th Islamic Solidarity Games and made up sampling group that could not get seal of certification after weapons control were high. These are body wires with the rates of 19,5% and 14% and epee weapon with the rate of 12,5%.

Even though the materials of fencers are tested and controlled in many different aspects in the weapon control unit, it is seen that the equipment which did not obtain seal of certification was detected among the equipment obliged to be used by the athletes after new regulations of FIE. These high rates may have been observed in the materials of the athletes who did not pay attention to these regulations or did not revise their equipment. Beginning from the season of 2020/2021, FIE has brought new arrangements for wire plugs and guard sockets. The images about these arrangements are as follows.

Figure 5. Epee guard sockets, old and new application (Leon Paul, 2022).

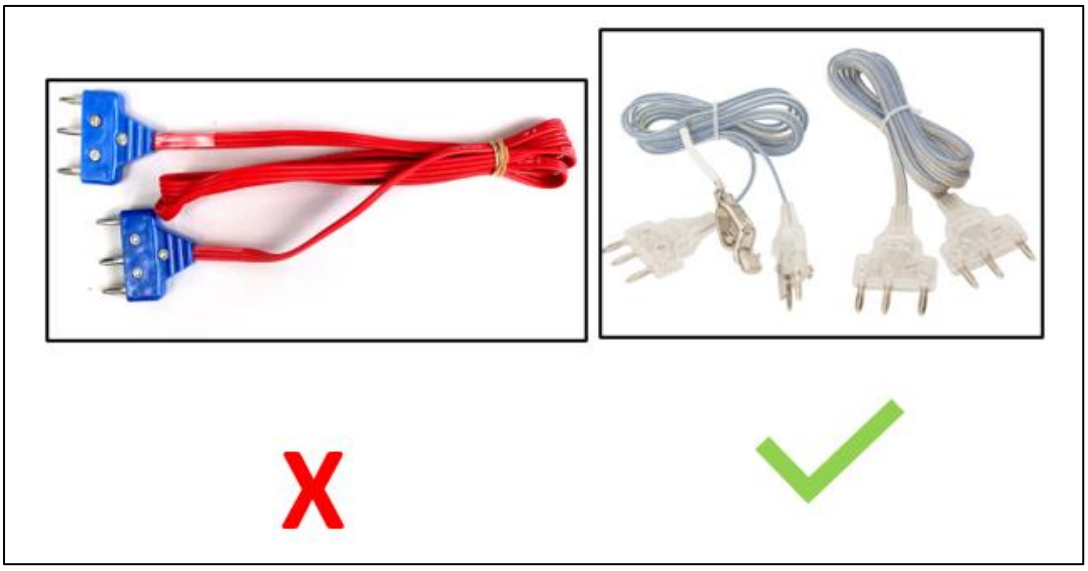

Figure 6. Body Wires (Old and New Application)

International Fencing Federation made a new arrangement in Articles 29 and 31 of material instructions and rules and published a regulation about the requirement that wire plugs of body wires are transparent. Again, in Article 18, a regulation was published stating that epee guard sockets should be double-hole (FIE, 2022). That the epee weapons did not obtain the seal of certification highly within the scope of the research may especially stem from the application of the rule of double holes in guard sockets of epee weapon which has been implemented since August of 2022. The 5th Islamic Solidarity Games took place in August and the relevant rule was applied during the weapon control process.

Even though the basic aim of the fencers was to increase their physical and mental performances to the highest level, they should also have the ability of to manage external factors which affect their success. Especially, they should carry out necessary equipment controls by themselves before delivering it to the Weapon Control Commission. Athletes, trainers and other relevant individuals are liable to know and apply the new decisions of rules of the international Fencing Federation and local federations. The equipment that the athletes use constantly may not receive approval from the approval control unit thus athletes may have adverse effects.

Limitations and Recommendations

The results obtained as a result of this research were obtained with the weapon control forms of the fencing athletes participating in the 5th Islamic Solidarity Games. For this reason, the sample group only consists of the athletes participating in this competition.

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