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The effect of stress training on some physical abilities, speed and accuracy of stabbing among junior fencing players

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Abstract

The purpose of this paper is to preparing a proposed training curriculum using pressure training to develop agility and force characterized by speed of the feet among young fencing players, and identify the effect of the proposed training curriculum of pressure training on the speed and accuracy of stabbing among young fencing players, and identifying the differences between the pre- and post-test in the research variables in the two research groups, the researcher used the experimental method by designing pre- and post-tests for the control and experimental groups. The research population was chosen by the researcher in a deliberate manner, and they are the young fencing players in Al-Majd Club, whose total number was (10) players. They were divided into two groups, a control group, and an experimental group. The force of each group is (5) players, the control group is the one that will continue training. With the trainer in regular exercises, the experimental group is the one to which the experimental curriculum prepared by the researcher will be applied. In order to obtain results that do not indicate an external or emergency circumstance far from the main influence, which is the proposed training program, the researcher conducted a homogenization process on the research sample: The training program prepared by the researcher had a clear positive impact on the process of training junior fencing players in specialized schools, and there are statistically significant differences between the pre-tests and post-tests of the control group in the research variables (agility, force characterized by speed, stabbing accuracy, stabbing speed) and in favor of the post-tests. One of the most important recommendations recommended by the researchers is that: Conducting other studies using stress training, and using stress training to develop other physical abilities specific to fencing.

Keywords: Stress training, speed of stabbing, accuracy of appeal

Introduction

Following the proper scientific approach and looking for anything fresh and modern in the topic of interest is one of the most crucial steps that must be taken in order to succeed and advance in any profession. The same is true for sports, where advancement and success are impossible to attain without workers who follow. The knowledge and experience of professionals and specialists in this subject serve as the foundation for scientific procedures and proactive planning in this field.

One of the games that experts need to play is fencing. Since the game requires a lot of abilities and high precision in using them, it takes ongoing research and analysis to determine the optimal training techniques. Numerous more factors that arise throughout gameplay and matches also contribute to the essence of this game. To become more proficient and consistent in using the skills, the player must engage in a variety of activities and their development. The ability to stab with a weapon is one of these key offensive skills in the game of fencing. It is also regarded as the first offensive weapon in the modern game of fencing because of its effect on the opponent's defensive skills, which prevent the weapon from easily reaching his body and thus affecting his plans. attacking, improving one's performance, or obtaining a clear advantage. Fencing athletes need to understand that stabbing is more than just a normal movement or a pointless skill used by players who don't have any objectives. Instead, it becomes the key ability that sets up scoring points and winning the game if it is executed accurately, quickly, and with good technique.

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It is the most crucial and successful component for earning points from the remaining talents. It also serves to boost the player's point advantage in the match, particularly if he masters it to the best of his ability. Finally, it adds elements of fun and excitement to the spectators and increases the enthusiasm of the battle. For this kind of expertise to be mastered, rigorous, ongoing training as well as thoughtful, in-depth research are needed. The coach must employ the best fencing training technique in order to raise the players' skill level and game. In order to improve performance in terms of speed and accuracy in the stabbing skill of young players, the researcher therefore devised the notion of applying pressure training in the training units. He feels that this is one way to do this. It will save time, produce accurate skill performance, prevent technical errors, and yield good outcomes. Due to previously learned errors in skill performance, particularly in relation to the improper timing of the hesitating movement in the steps and the instability of the body in a specific place during preparation, the young player experiences technical difficulties in skill development. This leads to an increase in excessive movements, which reduces accuracy in performing the stabbing skill and results in points being lost.

Research issue: The field researcher observed a weakness in the technical performance and accuracy of the stabbing skill as a result of coaches' disinterest in utilising contemporary training methods and methods in developing the training process, especially for youth players, through his follow-up fencing as a player, coach, and teacher, as well as through his observation of local matches in general and youth matches in particular. Because he thinks it will lead to favourable outcomes for improving some physical abilities, learning the fundamentals of this game, and saving time and effort, the researcher focused his attention on the procedure and training.

The goal of the study is to create a pressure training programme that will help young fencers improve their force and agility, which is demonstrated by their foot speed.

Determine how the pressure training curriculum that has been suggested would affect the youth fencing players' stabbing accuracy and speed.

Determining the variations in the study variables between the two research groups' pre- and post-tests

Determine the variations in the post-test results between the experimental and control groups.

Research hypotheses: Among young fencers, there are statistically significant differences in the research variables between the pre- and post-tests.

The post-test results show statistically significant variations between the experimental and control groups.

Fields of research

- **Human field:** Young fencers at the sports talent development centre
- **Time range:** August 6, 2023, to December 8, 2023
- **Physical area:** The fencing arena located at Baghdad's Ministry of Youth and Sports in Iraq

Terminology definition

Stress training is a contemporary form of training that places a strong emphasis on performance-based skills. During this exercise, the player completes the tasks at their fastest and

most forceful speed under a time limit starting at thirty seconds (Alwan: 2015:36) [2].

The velocity of a stabbing is a critical aspect that significantly influences the result of a match. Throughout the game, numerous attacking and defensive scenarios are witnessed, when a player's speed plays a crucial role in differentiating themselves from the opposition (Al-Hayali, 1989, 25) [7]. It is important to note that in order to surprise the opponent, speed must be defined as "the movements of the legs and the armed arm, all of which are directed towards the opponent's goal in the shortest possible time." (Al-Bayati, 91; 1983) [1].

Stabbing Accuracy: According to (Larry, 1981, 158) [11], accuracy is "an individual's ability to control voluntary movements to achieve a specific goal." In addition to expressing the person's capacity for sophisticated motor coordination, it also refers to minimizing deviations from peak performance (Al-Hajjar and Al-Tikriti, 1986, 67-68) [8].

Fieldwork techniques and research methodology

Methods of Research: Pre- and post-tests were created for the control and experimental groups in the researcher's present study, which employed the experimental approach.

Research on communities and samples: The youth fencing players at Al-Majd Club, totaling ten players, are the research population that the researcher carefully selected. Two groups were created out of them: an experimental group and a control group. Five players make up each group's force. The group that will continue training is the control group. The experimental group is the one to whom the researcher's experimental curriculum will be applied while the trainer engages in routine exercises. The researcher homogenised the study sample in order to get data that did not point to an emergency or external event that was unrelated to the major influence, which is the planned training programme. The homogeneity of the research sample is displayed in table (1).

Table 1: Shows the homogeneity of the sample

Variables	Measuring unit	Mean	Median	Std. Deviations	Skewness
Age	Year	15.46	15.58	0.823	0.694
Length	Cm	155.71	160.10	4.877	0.244
Mass	Kg	50.40	56.20	2.260	0.645

Methods and instruments for gathering data, as well as equipment utilised in the study

Methods of gathering data

- Chats with authorities and professionals.
- International and Arab sources.
- Global Network of Information.

Tools and gadgets

- Exams
- DELL laptop
- Rotate the weaponry (11).
- A face shield (10).
- Equivalent allowance (10)
- The stadium for matches
- Stab boards
- A measuring tape

- Sticky tape

Methods used in field research

Establish the tests

The researcher chose a series of tests to accomplish the following goals in order to measure a certain attribute or occurrence that the researcher wants to investigate and gauge its magnitude:

Initial/physical examinations

A fencing agility test (Mahdi, 2007: 121) ^[4]

- Assessing fencing agility is the test's goal.
- Requirements to administer the test: The test director, timer, and recorder are the three individuals who must be present for the test to be administered.

Equipment and gadgets

- An international-standard fencing stadium.
- A legal foil weapons.
- An electronic timer.

Test explanation

When the tester hears the test director's start signal, which is a whistle sound, he proceeds as usual towards line (C). When he touches this line, he proceeds as usual towards line (B). When he touches this line, he proceeds as usual towards line (5). After that, he returns with the normal retreat towards line (C). When he touches this line, he proceeds as normal advance towards line (G). Finally, he returns with the normal retreat to the starting point (A).

Registration procedure

- The recorder's responsibility is to document the amount of time the tester takes from the sound of the whistle until his front foot crosses the starting line.
- Keeps a time (second) log.

Assessing force characteristic through velocity: (Hajar (2007), p.43) ^[9]

Measuring the fencing player's force and speed is the test's goal.

Instruments utilised: Duct tape - Shuffle weapon - pause the timer.

Conduct the examination: As illustrated in the following figure, the athlete begins in the stimulation position, bends his knees fully, and then straightens them to reach the normal stimulation position. He then executes a stabbing movement, returns from the lunge to the low stimulation position by bending his knees, and repeats the exercise for ten seconds.

The following are the performance requirements

Staying in the motivated position, bending the knees, lunging correctly, avoiding torso forward leaning, and performing at top speed.

Registration method: In ten seconds, the amount of correct attempts is computed. The best attempt is counted after three attempts.

Second, proficiency exams

Test of stabbing speed (Yacoub, 1989: 50) ^[6]

The test's objective: Calculate the stabbing frequency's speed.

Instruments utilised: A sharpshooter is a marker with six circles drawn on it that are 10 cm in diameter and 5 cm in length, as seen in the illustration. The circle's height is (1) appropriate given the player's height. To measure the stabbing distance, use adhesive tape.

Performance method: The tester challenges the individual in front of him as soon as he hears the signal. Method of recording: The number of proper lunges that can be executed in 15 seconds is counted.

Test: The ability to aim accurately when stabbing in fencing (Abbas, 2000: 33.) ^[3]

The purpose of the test is to gauge how accurately a fencer can target their stabbing motion.

The following are the required tools: An electric fence device, an epee hand connection cord, and a marker designating the weapon's permissible target (2).

An explanation of the performance: Once all the equipment is attached, the tester stands ready in front of the tester. In order for the tester to touch the tester with the weapon's fly in a stabbing action, marks are set on the ground to indicate where the tester's feet should be in relation to each other. Subsequently, the tester indicates where to stab, as long as they don't take too long to react. Ten attempts are granted to the player.

Enrollment: Only successful attempts are recorded, which are ascertained by comparing the location of the touch and the lighting of the electrical device's lamp with the directive (given by the arbiter who requests to stabbing a specific number).

Pre-tests: On Sunday, November 6, 2023, the researcher administered pre-tests to the junior fencing players at the Ministry of Youth and Sports' Specialised Centre. The purpose of these tests was to determine the level of variables that needed to be looked for.

Programme of instruction that is suggested

The researcher first met with experts in the field of training after conducting multiple in-person interviews with fencing experts. Following these meetings, he also reviewed relevant literature and sought their advice before developing a training programme that used stress training to develop specific physical skills that directly benefit the sport of fencing. on the effectiveness and performance of the primary fencing skills as well as on honing those skills to the necessary level for players.

The trainer was left to handle the remaining vocabulary of the training unit; the vocabulary of this programme was applied inside the main component of the training units, which took between 10 and 20 minutes.

This training programme was implemented over the course of eight weeks, with three training units per week.

The researcher started putting the training programme used for stress workouts on the research sample and in the fencing hall of the Al-Majd Sports Club in Baghdad into practice on Wednesday, June 14, 2023.

Post-tests: On Sunday, August 2, 2033, following the completion of his training program's implementation on the research sample, the researcher administered post-tests to the junior fencing players at the specialised fencing centre using the variables under investigation. All of the information gathered from these tests was entered into registration forms. data in order to perform statistical analyses on it and draw research conclusions.

Statistical techniques: The arithmetic mean was one of the techniques applied.

- The deviation standard

Correlation coefficient, simple.

- The standard score.

- Changed the benchmark score.
- Weight in percentage.

Results and Discussion

Presenting, evaluating, and debating the findings of the physical prowess, stabbing accuracy, and stabbing speed pre- and post-tests conducted on the control group.

Based on the information gathered by the investigator following the administration of the control group's pre- and post-tests and subsequent analysis, the outcomes displayed are displayed in Table (2).

Table (2) shows the results of the pre- and post-tests of physical abilities, accuracy and speed of stabbing for the control group.

Table 2: Results of the pre- and post-tests of physical abilities, accuracy and speed of stabbing for the control group.

Variables	Measuring unit	Pre-test		Post-test		T value calculated	T value tabular	Type Sig
		Mean	Standard deviation	Mean	Standard deviation			
Agility	Second	6.330	0.032	7.472	0.069	4.549	2.776	Sig
Force characteristic by speed	Repetition	4.264	0.048	5.78	0.77	5.325		Sig
Speed of stabbing	Number	8.3458	0.052	10.117	0.065	4.363		Sig
Accuracy of stabbing	Correct attempts	5.22	0.035	7.535	0.056	3.646		Sig

Table (2) makes it evident that the researcher's findings from the control group's pre- and post-tests were as follows: The agility pre-test had an arithmetic mean of 6.330 and a standard deviation of 0.032, but the agility post-test for the same group had an arithmetic mean of 7.472 and a standard deviation of 0.032. With an error level of 0.05, the significance of the differences is considered significant when the standard value of 0.069 is compared to the calculated (t) value of 4.549. This indicates that the calculated value is more than the tabular value of 2.776.

The force characterised by speed had an arithmetic mean of 4.264 and a standard deviation of 0.0048 in the pre-test. Similarly, the force characterised by speed had an arithmetic mean of 5.78 and a standard deviation of 0.077 in the post-test for the same group, and the calculated (t) value was (5.325). This means that the significance of the differences is significant with an error level of (0.05), as it is bigger than its calculated value of (2.776).

The aforementioned table also reveals that the research sample's pretest arithmetic mean for stabbing skill speed was 8.345 with a standard deviation of 0.052, while the posttest arithmetic mean for the same group using explosive force was 10.117 with a standard deviation of 0.065. Although the tabulated value of (2.776) is less than the calculated value of (t), which is (4.363), the significance of the differences is substantial with an error level of (0.05). Additionally, Table (2) demonstrates that the control research group's arithmetic mean values for the accuracy of performing the appeal skill in the pre-test were 5.228 with a

standard deviation of 0.035, and 7.535 with a standard deviation in the post-test. It is worth (0.056). Additionally, the table above demonstrates that the computed T value reached (3.646), which is greater than the tabulated value of (2.776), indicating that the differences are significant at a 0.05 error level.

It is evident from the results presented and analysed in the table above that there were significant differences for the control group in the physical variables (agility, Force characteristic by speed) and the skill abilities (accuracy of performing the stabbing, speed of performing the stabbing) between the pre- and post-tests, and that these differences were in favour of the post-tests. Generally speaking, the researcher explains this by saying that the trainer's activities are standard routine exercises that require development and updating in order to improve the training process and yield measurable results.

Presentation, analysis and discussion of the results of the pre- and post-tests of the experimental group's physical abilities, accuracy and speed of stabbing

According to the data obtained by the researcher after he completed the pre- and post-tests for the experimental group and processed them statistically, the results shown were obtained, as in Table (3).

Table (3) shows the results of the pre- and post-tests of physical abilities, accuracy and speed of stabbing among the experimental group

Table 3: Results of the pre- and post-tests of physical abilities, accuracy and speed of stabbing among the experimental group

Variables	Measuring unit	Pre-test		Post-test		T value calculated	T value tabular	Type Sig
		Mean	Standard deviation	Mean	Standard deviation			
Agility	Second	6.280	0.031	9.115	0.072	6.312	2.776	Sig
Force characteristic by speed	Repetition	5.376	0.054	6.546	0.081	7.225		Sig
Speed of stabbing	Number	8.312	0.051	12.291	0.054	4.256		Sig
accuracy of stabbing	Correct attempts	5.331	0.042	8.231	0.066	5.910		Sig

It is clear from Table (3) that the results obtained by the researcher from the pre- and post-tests for the experimental group were as follows: The arithmetic mean for the pre-test on agility was (6.280) and a standard deviation of (0.031), while the arithmetic mean for the post-test for the same group on agility was (9.115) with a standard deviation of (0.031). The standard value reached (0.072), while the calculated (t) value reached (6.312), which indicates that it is greater than its tabulated value of (2.776), meaning that the significance of the differences is significant with an error level of (0.05).

The force measured by speed had an arithmetic mean of (5.376) and a standard deviation of (0.054) in the pre-test. The same group's post-test had an arithmetic mean of (6.546) and a standard deviation of (0.081), with a computed (t) value of (7.225). This means that the significance of the differences is significant with an error level of (0.05), as it is bigger than its calculated value of (2.776).

The aforementioned table additionally demonstrates that the experimental research sample's pre-test arithmetic mean for stabbing skill performance attained a value of (8.312) and a standard deviation of (0.051). Upon completing the stabbing skill post-test, the same group's arithmetic mean reached a value of 12.291 with a standard deviation of (0.051). However, the calculated (t) value was (4.256), indicating that the differences are significant with an error level of (0.05),

since it is bigger than its tabular value of (2.776).

Table (3) further demonstrates that in the pre-test, the experimental research group's arithmetic mean values for the accuracy of performing the stabbing skill reached (5.331), with a standard deviation of (0.042), and in the post-test, the arithmetic mean values reached (8.231), with a standard deviation of (0.042). It is worth (0.066). The computed T value, as shown in the above table, reached 5.910, which means that it is higher than the tabulated value of (2.776), indicating that the differences are significant at the 0.05 error level.

It is evident from the presentation and analysis of the results in the above table that there are significant differences for the experimental group between the pre- and post-tests and in favour of the post-tests for the physical variables (accuracy of performing the stabbing, speed of performing the stabbing, and Force characteristic by speed) as well as the skill abilities. These distinctions were obvious through information obtained from the exams' outcomes.

Presentation and analysis of the results of the differences in the post-tests between the control and experimental groups

Table (4) shows the results of the differences for post-tests in the research variables between the control and experimental groups

Table 4: Results of the differences for post-tests in the research variables between the control and experimental groups

Variables	Control group		Experimental group		T value calculated	T value tabular	Type Sig
	Mean	Standard deviation	Mean	Standard deviation			
Agility	7.472	0.069	9.115	0.072	4.245	2.776	Sig
Force characteristic by speed	5.78	0.77	6.546	0.081	3.359		Sig
Speed of stabbing	10.117	0.065	12.291	0.054	3.412		Sig
accuracy of stabbing	7.535	0.056	8.231	0.066	3.295		Sig

Table (3) makes it evident that the researcher's findings from the post-tests for the control group were as follows: The post-test results for agility had an arithmetic mean of 7.472 with a standard deviation of (0.069) for the experimental group, and 9.115 with a standard deviation for the other group. The calculated (t) value reached (4.245), whereas it reached (0.072). This means that it is bigger than the tabulated value of (2.776), indicating that the differences are significant at the (0.05) error level.

The calculated (t) value was (3.359), which indicates that it is greater than its tabulated value of (2.776), meaning that the significance of the differences is significant with an error level of (0.05). The arithmetic mean of the post-test for the experimental group with force characterised by speed was (6.546) with a standard deviation of (0.081), while the control group's post-test had an arithmetic mean of (5.78) and a standard deviation of (0.077).

The arithmetic means of the posttest for the control research sample's stabbing skill performance attained a value of (10.117) with a standard deviation of (0.065), as the table above also demonstrates. The posttest's arithmetic mean for the stabbing skill's speed was 12.291, with a standard deviation of (0.065). The calculated (t) value was (3.412), indicating that it is greater than its tabulated value of (2.776), indicating that the differences are significant at the (0.05) error level. Table (3) further demonstrates that the experimental group's post-test arithmetic mean was (8.231), whereas the control research group's pre-test arithmetic

mean for stabbing skill accuracy was (7.535) with a standard deviation of (0.056). The table above also reveals that the computed (t) value was (3.295) with a standard deviation of (0.066). This number is more than the tabulated value of (2.776), indicating that the discrepancies are significant with an error level of (0.05).

Discussing the results

With regard to the physical variables of the research (agility and force characterised by speed) and the skills unique to the game of fencing (accuracy and speed of stabbing), it is evident from looking at the results in Tables (2, 3) that there are significant differences between the pre- and post-tests, as well as for the control and experimental groups, and in favour of the post-tests. In other words, study variables are employed with two training approaches, conventional and suggested.

According to the researcher, the control group's development may be attributed to their application of scientific programmes that are codified in line with the principles of sports training science and aim to enhance the athlete's training level. As stated by Allawi (Al-Tikriti and Al-Hajjar: 1986: 17) ^[8], "training works to improve both physical qualities and the level of skill performance" (Abdel Majeed, and Al-Yasiri: 2010: 22) ^[5]. "The goal of the training process is to bring the individual athlete to the highest level of athletic achievement in the event or activity he specialises in."

Additionally, Table (4), which shows the results of the differences between the experimental group's post-tests and those of the control group, reveals a distinct difference in those results, favouring the experimental group's post-tests. The researcher credits this development to the effectiveness of the unique exercises she prepared, which During the training curriculum, the players executed these exercises in the primary training unit section. These exercises were designed precisely and in accordance with the correct scientific technique, drawing from scientific sources, prior studies, and research. They were designed and developed in accordance with the needs of the fencing player in terms of exercises that are very beneficial and effective in developing his physical, skill, tactical, psychological, and mental abilities. The researcher's specially created exercises are crucial in helping the fencer develop his perceptual, mental, and cognitive abilities as well as all of his other skills, capabilities, and experiences that he needs when training or switching up sparring situations.

Conclusion

Based on the researcher's statistical analysis of the data, a number of findings were drawn, including:

- There was a noticeable improvement in the way juvenile fencing athletes were trained at specialised schools according to the training programme the researcher created.
- In the research variables (agility, force characterised by speed, stabbing accuracy, and stabbing speed), there are statistically significant changes between the pre- and post-tests of the control group, favouring the post-tests.
- In the study variables (agility, force characterised by speed, stabbing accuracy, and stabbing speed), there are statistically significant changes between the pre- and post-tests of the experimental group, favouring the post-tests.
- The post-tests for the research variables (agility, force characterised by speed, stabbing accuracy, and stabbing speed) show statistically significant changes in favour of the experimental group compared to the control group.

Recommendations

- Carrying out additional research with stress training.
- Applying stress training to enhance additional fencing-specific physical skills.
- Pressuring coaches to teach fencing athletes in different age groups using stress training.

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