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The effect of Ki-Hara style exercises on developing special strength and some defensive skills in handball

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Abstract

Handball has become one of the sports that delights onlookers as a result of its attractiveness, beauty, speed of performance and the transition from attack to defence, in addition to the fact that achieving achievement and levels in this sport did not come out of the blue but rather science was and still is the basis for it. Scientific development has added many modern training methods that suit the nature and capabilities of the player, so the training process took a form and organizational structure consistent with the state of the new development of methods and means used in the training process. The research aimed to prepare exercises in the (Ki-Hara) style for the players of the specialized school in reel. hand, and identifying the effect of Ki-Hara style exercises in developing the special strength and some defensive skills of the handball specialist school players. Through the two researchers' follow-up of the handball specialist school training, they noticed the coaches' reliance on traditional methods of flexibility and stretching training using machines and weights or with body weights. Passive as resistance, which the player then tries to overcome. Therefore, the researchers resorted to "using the Ki-Hara method as a new or innovative form of flexibility training, founded by Steven Sierra and Anne Tierney, which works to develop both strength and flexibility together in the training unit, where the player constantly deals with his muscles." While the other end gently pushes it inward by dynamically lengthening and strengthening the body in safe ranges, thus keeping the muscles and joints safe from injury." The two researchers used the experimental method in the style of one experimental group with two pre and post-tests to suit the nature of the research problem. The research sample was represented by the players of the Specialized School of Handball, who numbered 14 players, and this achieves one of the sustainable development goals of the United Nations in Iraq which is (Good Health). The two researchers concluded: - The exercises prepared by the two researchers have a major role in developing special strength (explosive strength of the arms - legs, strength distinguished by speed) and in developing handball defensive skills (confrontation - coverage).

Keywords

ki-hara style training, handball, muscular strength , defense .

Introduction:

Handball has become one of the sports that delights onlookers as a result of its attractiveness, speed of performance and the transition from attack to defense. In addition, achieving achievement and levels in this sport did not come out of blue but rather science was and still is the basis for it. Scientific development has added many modern training methods that suit the

nature and capabilities of the player, so the training process took a form and organizational structure consistent with the state of new development of methods, methods and means used in the training process. Training methods and programs have become diverse and numerous and it has become necessary for the coach to choose training programs and methods. Which is compatible with the characteristics and

capabilities of its players, as it works to develop their physical abilities, which in turn leads to improving the level of their digital achievements. Therefore, the importance of the research lies in the necessity of directing trainers to use methods of developing flexibility from the traditional method to the modern method. Through the two researchers' follow-up of the handball specialist school's training, they noticed that the trainers adopted training methods that were not compatible with the desired goal of research with or without tools, and staying away from everything that is familiar. The goal of the two researchers is to develop personal strength, not to develop flexibility and muscle lengthening. The problem must be precisely defined and supported by the results of previous or reference studies to clarify the need to study the research problem. using " Therefore, the two researchers resorted to form the Ki-Hara method as a new and innovative of flexibility training, which was founded by Stephen Sierra and Anne Tierney" and works to develop both strength and flexibility together in the training unit, where the player constantly deals with his muscles while... He gently pushes it inward with the other end by dynamically lengthening and strengthening the body in safe ranges, thereby keeping the muscles and joints safe from injury ".(2) The research aims to prepare exercises in the Ki-Hara style for the players of the Specialized Handball School from Through:-. Identifying the effect of Ki-Hara style exercises on developing the special strength and some defensive skills of the handball specialist

school players. The research hypothesis is that there are statistically significant differences between the pre- and post-tests in the special strength and some defensive skills in handball. As for the areas of research, they included: - The human field: a sample of the players of the Specialized School of Handball. The spatial field: the interior hall of the Specialized School of Handball. The temporal field: the period from 1/2/2023 to 7/4/2023.

Method and procedures:

The two researchers used the experimental method with a pre and post-test for one group due to its suitability and the nature of the research problem. The experimental method is the most widely used scientific method, in addition to its suitability to the research objectives. The research society was limited to the players of the Specialized Handball School, who numbered 14, and the goalkeepers who numbered 2, were excluded, as the research sample became 12 players. The sample percentage of the population was 85.71%. In order to know the homogeneity of the individuals and the research sample, the researchers used measures of height, weight, and age, as the value of the Coefficient of torsion is limited to(3±)The results indicated that the sample is homogeneous, and as shown in Table (1) since "it is one of the things that the researcher must do." Determining it means selecting a sample that accurately represents the community of origin".

Table(1)
Shows the homogeneity of the research community in the research variables

Variables	Asthmatic mean	Median	Standered deviation	Coefficient of torsion
Length	1,704	1,700	0,560	0,021
Wight	67,250	67,500	3,568	0,210
Age	15,87	16,00	0,8061	0,462

The value of the Coefficient of torsion is limited to ±3, which indicates the homogeneity of the population and its moderate distribution.

Through the researchers' access to sources, references and previous studies in the field of handball and sports training, and as a result of the researchers' experience in training, the researchers identified tests for the special strength and defensive skills under research.

- Test of throwing a medicine ball weighing 2 kg from a seated position on a chair (4)
- Long jump from a standing position (4)
- Forward support test: bending and extending the moving arms within 10 seconds (4)
- Individual defensive blocking test by jumping high (5)
- Testing defensive movements forward and backward with an inclination (5)

After identifying the most important basic variables with research and the tools and devices used, the two researchers prepared flexibility exercises Ki-Hara based on the researchers' experience in the field of sports training. The pre-tests were conducted on Monday, February 7,

in the handball court at the school. ,2022 Specialized for special strength tests (explosive strength for the arms, legs) (distinctive speed strength for the arms) and skill tests for defensive skills, blocking, and confrontation, as the training curriculum was used over 9 weeks at 3 training units per week, i.e (27) training units Post-tests for the variables under study were conducted on on the research group. Physical skill (2022/5/4) exercises were prepared and the principle of specificity in training was adopted, as the goal of the exercises was to develop both strength and flexibility, and to demonstrate the reflection of this development on defensive skills is under review. search . Then use the statistical program (SPSS) to analyze the results and process them statistically.

Results:

After obtaining the data and results and processing them statistically using the statistical package program (SPSS).

- **Presenting and discussing the results of the pre- and post-tests of the special strength variable in the research sample.**

Table (2)

shows the arithmetic means and standard deviations for the results of the pre- and post-tests for the special strength variable among the research sample

Variables	Pre test		Post test		A M D	D D	Calcul ated T	Error level	Signifi cance
	A	STD	A	STD					
The explosive power of arms	6.550	1.110	6.967	0.993	0.417	0.273	4.311	0.004	Sign
The explosive power of legs	1.827	0.064	1.913	0.056	0.086	0.037 3	6.524	0.001	Sign
The distinctive strength of the arms	11.12 5	3.136	8.375	2.445	2.750	3.011	2.582	0.032	Sign

Significant below the significance level of 0.05 and below 11 degrees of freedom

Presenting and discussing the results of the pre- and post-tests of the defensive skills under study

It shows the arithmetic means and standard deviations of the results of the pre and post-tests of the defensive skills under study

Table(3)

Shows the arithmetic means and standard deviations of the results of the pre- and post-tests of the defensive skills under study

Variables	Pretest		Post test		A M D	D D	Calcula ted T	Error level	Significance
	A	STD	A	STD					
Firewall	1.625	1.187	4.00	0.755	2.375	0.744	9.029	0.001	Sign
Interview	2.1250	0.640	4.7500	0.707	2.625	0.744	9.979	0.000	Sign

Significant below the significance level of 0.05 and below 11 degrees of freedom

Discussion:

It is clear from Table(2,3) that there are statistically significant differences between the pre and post-tests of the special strength and defensive skills in handball under study. The reason for this is due to the exercises used in the Ki-Hara style, which is one of the modern forms of training, tha it is a new and innovative form of flexibility training that works to develop both flexibility and strength together during the training unit, and this was confirmed by a study of Jihad, “where the player constantly deals with his muscles.” While the other end gently pushes it inward by dynamically lengthening and strengthening the body in safe ranges, thus keeping the muscles and joints safe from injury" (1).This is what Alia Ali confirmed, quoting Muhammad Hassan, “that through the use of a group of muscles in the body, which in turn led to the development and improvement of strength, and because these muscles have a major role in performing skills" (12). Therefore, the two researchers sought to prepare exercises in a style (Ki-Hara)as a method for improving the flexibility and strength of the joints and increasing their range of motion and its clear reflection on strength levels. Also, the high degree of muscle elasticity and length positively affects the strength of muscle contraction, and the longer the muscle is characterized by its length and its ability to elongate, the more this helps to produce the best degree of strength muscle contraction. This is confirmed by Kamal Abdul Hamid’s study: “The development that occurs in

muscular strength as a result of exercises prepared using the flexibility method with resistance Ki-Hara means that training programs that improve and develop the processes of supplying the body with energy will have an impact on the physical and skill level of performance" (4).Moving away from traditional methods in developing muscular strength had a clear impact and clear repercussions in developing the defensive skills under study blocking wall matching among handball players, as the reflection of the physical aspect seemed to have a clear impact in developing the skill aspect, developing special strength and dealing with abilities. Concerning the movement to which the players’ body is exposed as a result of increasing and reducing the burden placed on their working muscles through performance and the effectiveness of the exercises used in the training curriculum used, which led to the development of some physical attributes, including strength characterized by speed, as it is one of the necessary and important physical attributes in the game of handball. And this is what was confirmed by the study of Waroud Raheem, “It is one of the complex characteristics as it consists of two basic characteristics, which are strength and speed, as this characteristic plays an important and prominent role in deciding the results" (6).The study of Naglaa Al-Badri and Amr Hamza confirmed that “prepared exercises have worked to improve The speed of motor transition by organizing the muscular action between contraction and relaxation of the

working muscles, which helps in performing the movement regularly and easily because among the requirements of the game of handball are speed, diversification, and change in play from one skill to another, and to keep up with the developments taking place in the game of handball, which requires the player has a particularly high degree of strength and speed" (3). The study of Hadeel Talib and Suhad Qasim, quoted by Qasim Hassan, confirmed that "the stages of skill preparation are among the important stages that play an essential role in preparing offensive and defensive plans, and that failure to implement these duties leads to poor performance" (8). The coach chose the style, training equipment technically and means, appropriate to the form of the sport. This is what was confirmed by the study Intithar Jumaa Mubarak and others "The selection of exercises, the training load, and rest periods has become necessary to pay attention to because they are the mainstay and an important indicator for handball coaches" (10). This is what was confirmed by the study of Shaima Jaafar, "The strength characterized by speed is linked to skill performance." The more the player possesses it well, the higher his skill performance will be. (11). The researchers used the ki-hara method and prepared exercises, the main goal of which was to develop muscular strength and flexibility, and its reflection appears on the skill aspect, in addition to the fact that the development of defensive skills is only a reflection of the development of the player's physical capabilities in a fundamental way, as the exercises prepared by the researchers focused on developing the defensive skills used in the research. The diverse vocabulary of exercises for skills provides more rest time, and can allow the player to regain recovery. It is the muscular strength of the joints of both arms and legs that has a positive impact on the level of performance of skills in special requirements, and the development process is elaborate in nature with muscle contraction. When performing exercises, this is what was

confirmed by the study of Diana Haider and Widad Kazem, citing Qasim Hassan Hussein, "There are sufficient rest periods to restore the "functional state appropriate for the exercises to return to the normal state" (9). This is what was confirmed by the study of Najla Al-Badri and Amr Hamza "that One of the basic methods for developing strength characterized by speed is through developing strength through complex and varied exercises and lateral movements that lead to the development of the participating "muscle groups (3) and a study by Adel Hamid Obaid Al-Dulaimi "Thereby developing the working muscles due to the training stress they are exposed to It has these muscles, which are related to the required strength, and whose work can be developed through the use of exercises" (14). This was confirmed by the study of (Jumana Ghazi Salman, quoted by Aqeel Yahya) that "all movements of the legs, which are the decisive factor for the jumping distance, are mainly based on For the quick force he exerts in a short time, especially movements against resistance." (13) This is confirmed by Rand Issa's study, "The force characterized by speed and explosive force is one of the basic abilities that plays an important "and fundamental role in skills (7)

:Conclusions and recommendations

1. The exercises prepared by the two researchers have a positive role in developing special strength.
2. The exercises prepared by the two researchers have a major role in developing handball defensive skills matching coverage

:Recommendation

:The researchers recommend

1. Adopting the ki_hara method to develop strength and muscle lengthening.
2. Using ki-hara exercises in training for different categories and samples and other games.

Author's declaration:

Conflicts of interest: None

We confirm that all tables and figures in this article are ours and written by the researchers themselves.

Ethical-Clearance: this manuscript approved by local ethical committee of physical education and sport sciences college for women on (June/2023)

Author's contributions:

All contributions of this study were done by the researchers (M.A. and I.J.) who get the main idea and work on writing and concluding also with number of experts, Karrar Sattar (Mathematic Teacher) in Statistics, Huda Shihab in revision, Nour Riadh in translating, Stuart Biddle in proofreading

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تأثير تمرينات بأسلوب Ki-Hara في تطوير القوة الخاصة وبعض المهارات الدفاعية بكرة اليد

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أصبحت رياضة كرة اليد من الرياضات التي تبهج الناظرين نتيجة لجاذبيتها أو لجمالها وسرعة الأداء فيها والانتقال من الهجوم الى الدفاع فضلا عن أن تحقيق الإنجاز والمستويات في هذه الرياضة لم يأت من فراغ بل كان ولا يزال العلم هو الأساس فيه . فالتطور العلمي قد أضاف الكثير من الأساليب التدريبية والحديثة التي تلائم طبيعة وامكانيات اللاعب , لذا اتخذت العملية التدريبية شكلا وهيكلًا تنظيميًا تتفق وحالة التطور الجديد للطرائق والأساليب والوسائل المستخدمة في عملية التدريب . وهدف البحث الى اعداد تمرينات بأسلوب Ki-Hara لدى لاعبي المدرسة التخصصية بكرة اليد, التعرف على تأثير تمرينات بأسلوب Ki-Hara في تطوير القوة الخاصة وبعض المهارات الدفاعية لدى لاعبي المدرسة التخصصية بكرة اليد ومن خلال متابعة الباحثان لتدريبات المدرسة التخصصية بكرة اليد لاحظنا اعتماد المدرب على الطرائق التقليدية في تدريبات المرونة والاطالة باستخدام الآلات والاوزان أو بأوزان الجسم السلبي كمقاومة والتي يحاول اللاعب التغلب عليها بعد ذلك . لذا لجأت الباحثان الى "استخدام أسلوب Ki-Hara باعتبارها شكل جديد ومبتكر من تدريبات المرونة تم وضع اسسه ستيفن سيررا وانني تيرني (Steven Sierra and Anne Tierney) ويعمل على تنمية كل من القوة والمرونة معا في الوحدة التدريبية حيث يتعامل اللاعب باستمرار مع عضلاته بينما يدفعها بالطرف الأخر بظلف الى الداخل من خلال إطالة وتقوية الجسم بشكل ديناميكي في نطاقات امنة وبذلك تحافظ على سلامة العضلات والمفاصل من الإصابة." استخدمت الباحثان المنهج التجريبي بأسلوب المجموعة التجريبية الواحدة ذوات الاختبارين القبلي والبعدي لملائمته لطبيعة مشكلة البحث . اما عينة البحث فتمثلت بلاعبي المدرسة التخصصية بكرة اليد وعددهم 14 لاعب، وهذا ما يحقق احد اهداف التنمية المستدامة للأمم المتحدة في العراق (الصحة الجيدة). واستنتجت الباحثان :- أن التدريبات المعدة من قبل الباحثان دور كبير في تطوير القوة الخاصة (القوة الانفجارية للذراعين –رجلين , القوة المميزة بالسرعة) ان التدريبات المعدة من قبل الباحثان دور كبير في تطوير المهارات الدفاعية بكرة اليد (المقابلة – التغطية)

مستخلص البحث

تدريبات بأسلوب ki-hara ، كرة اليد ، القوة العضلية ، الدفاع.

الكلمات المفتاحية