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Effect of Isokinetic Exercises Similar to Performance to Develop Legs Strength and Achievement of Female Long Jump

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Abstract

Study purpose. This study aims to identify the effect of Isokinetic similar to performance exercises to develop legs muscular strength and achievement of female long jump, women have less muscle mass, therefore less strength, so the strength level of female athletes must be developed in various ways, including using isokinetic exercises.

Materials and methods. The research method using experimental was used the experimental design of random selection equivalent groups with pre- and post-observation, Researcher selected sample intentionally, The research community was composed of (9) national team long jumpers. The sample was selected with (8) players, and (1) player was excluded due to her high achievement of 5 m., which affects homogeneity and equality. The validity and reliability of instruments rely on extracted coefficient of self-truthfulness, and by test and retest to inform tests stability.

Results: Results of research showed that isokinetic exercises similar to performance have a positive effect on level of achievement among female long jump players, which were represented in physical variables and level of achievement, and that there were in variables of physical abilities and level of achievement, where they excelled.

Conclusion. Concluded that experimental group that used Isokinetic similar to the performance exercises achieved the training objects in developing the muscular strength and achievement of female long jump. Accordingly, it was recommended the adoption of exercises Isokinetic similar to the performance as it achieved the training objects in developing legs muscular strength and achievement of female long jump.

Keywords: Isokinetic Exercises, Muscular Strength, Women's Long Jump.
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Introduction

Scientific techniques and innovations produced by scientists in various disciplines reap their fruits in raising the level of progress for the countries that are interested in this aspect, and one of these fruits in the sports side is to achieve victory and progress as a result

of the interest of scientists in the sports side through the selection of training methods, methods and exercises built scientifically(Miguel et al., 2021)

Therefore, the choice of the correct and influential exercises in the specialized game helps to achieve achievements as there are many exercises.(Edwards et al., 2023) including physical, skill and tactical and each type of these exercises give constructive goals to the player's body help him in the application of the correct performance and this sees (Shareef, 2022) Exercises are "physical Performances that are performed in various organs of the body according to educational and scientific conditions that depend on the physiological and anatomical side, which are performed once or several times according to the flow and perfect agreement"(Shareef, Q. B., & Digham, 2022).

As for sports, each game has a peculiarity in training and training style in which the exercises are applied, and for this reason, the exercises with the Isokinetic device have proven successful in raising the physical level, especially the muscular strength of various sports, and the track and field games. including the long jump, are one of the sports events that require muscular strength and must be trained with this device, which is the Isokinetic that you see (Rivera-Brown, 2022) "The Isokinetic is one of the new training methods in the development of muscular strength, which makes it a more responsive method with special mathematical skills".(Rivera-Brown et al., 2022) (Van, 2022) argues that "the Isokinetic maximum muscle contraction with constant speed during the full range of motion is similar to the motor contraction of a skill".(Van der Woude et al., 2022) Therefore, the importance of the research is evident through the training of the muscles working in the long jump, especially the legs, to raise the level of strength required and important to cross the horizontal distance and achieve results and records after the appropriate exercises are used on the Isokinetic device for muscle strength training.

The research problem was that the broad jump of sports events that require achievement in which to raise the level of muscle strength of the working muscles and we mean the important legs in the process of approaching and jumping to achieve the maximum horizontal distance and achieve records, which requires developing them according to the needs of the game for strength, whether characterized by speed or explosion and using the appropriate exercises for it and the choice of exercises and training style has become a research problem that requires searching for .(Wilk et al., 2024) The study aimed to identify the effect of Isokinetic exercises similar to Performance in developing legs muscular strength and achieving female long jump.

Through the researcher's experience in track and field games, being a former player, coach and academic, she noticed the achievements achieved effectively in the long jump for women do not achieve ambition and the reason for the physical aspect, especially the weak muscular strength that does not allow the players to achieve high jump, which was discussed with the owners of experience and specialization of coaches that attribute the use of exercises and strength training recognized on the field and not to use the required devices of the Isokinetic, a special device for manpower training, and perhaps its application achieves the goal of the required training and the results (Brígido-Fernández et al., 2022).

Materials and methods

Study participants

To achieve the research objectives and addressing the research problem the researchers used the experimental approach with the design of the two equivalent control and experimental groups, the researcher determined the research community with the long jump players of the national team in a deliberate way and their number was (9) players, after which the sample was selected and their number was (8) players and the exclusion of a player (1) due to the high achievement of up to (5 meters), which affects homogeneity and parity, and

the sample was divided randomly into two control and experimental groups by (4) players for each group and the sample was homogeneous using the coefficient of variation within each group as well as equivalence as shown in Table 1.

Table 1. Shows homogeneity within each group and equivalence between the control and experimental groups of the research sample

Measurements				Mean	Standard deviation ±	Torsion coefficient	Significance level
Height/cm	174.21	1.521	0.873	174.36	1.624	0.931	1.168	Insig
Mass/kg	65.21	0.895	1.372	65.41	0.964	1.473	0.263	Insig.
Explosive power (cm.)	42.151	0.745	1.767	42.35	0.784	1.851	0.317	Insig.
Power (rep.)	20.745	0.645	3.109	20.64	0.687	3.328	0.193	Insig.
Achievement (m.)	3.10	0.452	14.58	3.13	0.531	16.96	0.074	Insig.

Tabular (T) value = 2.447

Table 1 shows the values of torsion coefficient are limited between (+3) and (-3) Where "goodness of sample distribution can be determined from size of the population. Values and their proximity to each other or their dispersion and distance from each other, and thus we have a measure of extent of homogeneity of statistical group".(Sapozhenkova et al., 2024).

Study organization

The researcher used the experimental method because it suits the nature of the research. The researcher used the experimental design called design of random selection equivalent groups with pre- and post-observation.(Ramadhan et al., 2023) Training program for multi-form resistance began 8/ 9/ 2024.

1. Program is appropriate for age group and subject to general goal.
2. Determine aim of program and objectives of each stage of its implementation.
3. Identifying most important training duties and easy availability of capabilities, tools.
4. Taking into account clear rest periods to bring appropriate formation of components of training load
5. Gradual increase appropriate progress loads and Steps to build the proposed program: researcher followed following steps to build and design.

The scientific foundations of the tests (Validity, stability, and objectivity) have been applied, as shown in Table 2.

Table 2. Shows the factors of validity, stability, and objectivity of the physical abilities and performance of female long jump players

No	Statistical Features Tests	Unit of Measurement	Stability Coefficient	Self-Validity	Objectivity
1	Explosive power	cm.	0.95	0.97	0.90

No	Statistical Features Tests	Unit of Measurement	Stability Coefficient	Self-Validity	Objectivity
2	Legs power	Rep.	0.98	0.99	0.93
3	Long jump achievement	degree	0.88	0.93	0.88

Table 2. shows that the values of the correlation factors ranged between (0.88 and 0.99), which indicates that the tests have high validity, stability and objectivity coefficients.

Stability. The tests were applied to the sample of the exploratory experiment of (4) players, and these tests were repeated after three days and then the researcher extracted "correlation coefficient between the results of the first and second test, where the results of all values were higher than the tabular values, which indicated the stability of these tests".(Majid, 2016)

Validity. The researcher extracted the coefficient of self-truthfulness "by calculating the square root of the coefficient of stability".(Khazaal, 2025) Where the results indicate the validity of these tests when applied at any time and as shown in Table 3 .

Objectivity. Through the explorato experiment and in the second test and then assigning two specialized referees to indicate the results of the tests. After the implementation of these tests, the data collected by each of them and then analyzed statistically through the use of Pearson's correlation coefficient, so all values were positive and greater than the tabular values, which indicated the objectivity of these tests through the strength of the relationship between the degrees of the two referees as shown in Table 3.

Table 3. Shows the scientific foundations of the tests used on the research sample

No.	Tests	Coefficient of stability	Honesty coefficient	Objectivity coefficient
1	Explosive power	0.95	0.97	0.85
2	Legs power	0.88	0.93	0.80
3	Long jump achievement	0.90	0.94	0.91

Note that the tabular value is (0.632) under the degree of freedom (8) and the level of significance (0.05)

Research Tests

1-Explosive power:

Purpose: Measurement of the explosiv power of the two men.

Tools: tape measure - wall - chair - chalk - recorder - registration form. Performance: The player stands facing the wall with the shoulder of the arm holding a piece of chalk, which begins after raising the arm up a point, and after swinging the arm high with jumping by extending the knees, another sign is placed with the maximum height of the jump.

Registration: The distance between the first and second marks is calculated and 3 attempts are given, provided that the best attempt is recorded.(Parraca et al., 2022)

2-Legs power test:

Objective: Measure the legs power.

Performance: Bend the knees and extend them for 20 seconds.

Devices and instruments: Stopwatch.

Test description: From a standing position, the player bends the knees and extends them within 20 seconds, provided that the ground does not rest.

Recording: Calculate the number within 20 seconds.(Kabacinski et al., 2022)
3-Long jump achievement test: The researcher is selected according to the international law of athletics and given to the player three attempts.

Exploratory experiment:

On 14/10/2024, an exploratory experiment was conducted for the applied sample through the application of exercises to know the components of pregnancy and to know the obstacles facing the researcher.

Exercises used:

A set of required exercises for muscular strength was placed on the isokinetic device, which gives resistance to the legs muscles quantitatively.(Van der Woude et al., 2022) These exercises were applied during two months and for a period of 8 weeks and the number of 24 training units, three days a week, the training intensity ranged between (85-95%), as for the training size, the size was determined by intensity, and regarding the rest, the pulse was adopted between the repetitions 120-130 beat/minute, and between the totals 110-120 beat/minute, and the exercises were applied during the period of special preparation.(Poole et al., 2012).

Statistical analysis

The researcher used the statistical program (SPSS), which included the following statistical means: arithmetic mean, standard deviation, simple correlation coefficient (Pearson), test (T) for correlated samples, analysis of one-way variance Anova).(Byshevets et al., 2019; Hartill et al., 2021)

Results

Results of pre and post-tests of the control group in physical tests:

Table 4. Shows the means of pre and post-tests, standard error and calculated and tabular (t) values of the control group in physical tests

Tests	Pre-test mean	Post-test mean	standard error	calculated (t)	Sig. level
Explosive power (cm.)	42.152	44.54	0.574	4.16	Sig.
Power (rep.)	20.745	22.14	0.412	3.385	Sig.
Achievement (m.)	3.10	3.60	0.15	3.33	Sig.

Tabular value of (T) at degree of freedom (3) and under probability of error (0.05) = 3.182

Table 5. Shows the means of pre and post tests, standard error and calculated and tabular (t) values of the experimental group in physical tests

Tests	Pre-test mean	Post-test mean	standard error	calculated (t)	Sig. level
Explosive power (cm.)	42.35	46.78	0.787	5.628	Sig.
Power (rep.)	20.64	25.41	0.898	5.311	Sig.
Achievement (m.)	3.13	4.11	0.19	5.157	Sig.

Tabular value of (T) at degree of freedom (3) and under probability of error (0.05) = 3.182

Table 6. Shows the means of pre and post-tests, standard error and calculated and tabular (t) values of the control and experimental group in physical tests

Tests	control		experimental		calculated	Sig.
	Mean	St.d	Mean	St.d	(t)	level
Explosive power (cm.)	44.54	0.451	46.78	0.562	5.384	Sig.
Power (rep.)	22.14	0.475	25.41	0.674	6.869	Sig.
Achievement (m.)	3.60	0.223	4.11	0.124	3.469	Sig.

Tabular value of (T) at degree of freedom (6) and under probability of error (0.05) = 2.447

Discussion

According to Tables 4 and table 5 show there is a development of the control and experimental groups in the research variables, especially the muscular strength represented by legs explosive power, legs power, and long jump achievement.(Mahmoud et al., 2025)
This is evidence of the success of the exercises used for the two groups, which achieved the objectives of the training used as he sees (Wilk, 2024) The upgrading of the level of sports performance is one of the indicators of the success of the training process in order to reach the highest levels of sports, the great development that has occurred in the methods of training is the result of increasing interest by searching for new methods in training players and relying on scientific foundations in planning and developing training programs that make them able to improve digital levels.(Wilk et al., 2024)

While (Oliveira, 2024) believes that sports training aims to improve the player's physical abilities according to the sports activity practiced and the player's level is developed physically in addition to the methods and means of training because of their impact on the physical aspect.(de Oliveira et al., 2024)

The table 6 showed there superiority of the experimental group on the control as a result of the use of correct training for muscle strength, especially the isokinetic device to train muscular strength and necessary to achieve athletic achievement as he sees (Kabacinski, 2022) The performance in all sports activities depends on how the body moves, and the role of the muscles control the performance of the body through contraction and relaxation and the stronger the muscles, the more effective these contractions and therefore the performance is better (Kabacinski et al., 2022).

The role of the isokinetic device comes in the development of force of all kinds, including explosive and power, if this device is as sees it (Schindler, 2023) "Isokinetic perform better in producing and improving power and strength, depending on the ability to control angle and speed during the desired range of motion, in addition to increasing the ability of muscles to contract at a faster rate and more during the range of motion in the joint.(Schindler et al., 2023).

In terms of strength characteristic of speed and its impact on the long jump to achieve achievement sees (García, 2024) The training with various tools have a significant impact on the development of the characteristic of strength characteristic of speed as these exercises depend on increasing the speed of muscle contraction because the goal of preparing muscle strength is to obtain rapid strength.(García-Buendía et al., 2024)

The results showed development at the level of the muscles working in the long jump, especially the legs, to raise the required and important ability to cross the distance and achieve results and records after the appropriate exercises are used on the Isokinetic device for muscle strength training, and this is in line with what he confirmed by (Ding, 2024) Isokinetic Exercises can significantly benefit athletic performance in Long jump, it allows athletes to enhance their power while improving crucial variables related to endurance. This endurance and explosive power type is particularly vital for track and field players. For

example, athletes in high jump and long jump must exert maximum effort during high-intensity middle and back-court play. (Ding et al., 2024).

Finally, the use of exercises used in the study has achieved the desired goal and raised the level of achievement in the long jump and this is what he sees (Brígido, 2022) "The scientific goals of sports training to reach the player to a higher level in sports achievement and effectiveness.(Brígido-Fernández et al., 2022).

Conclusions

Exercises (Isokinetic) similar to performance achieved the training goal in developing legs muscle strength, and long jump achievement for female. The use of training equipment in training physical abilities, especially the explosive power, and legs power has an impact on achievement and records in the long jump. It is recommended that longitudinal studies be conducted over various periods to determine the impact of isokinetic exercises on developing muscular strength. Similar studies should be conducted on different types of athletics and on different samples.

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Conflict of interest

Author stated that there was no interest conflict.

References

Brígido-Fernández, I., García-Muro San José, F., Charneco-Salguero, G., Cárdenas-Rebollo, J. M., Ortega-Latorre, Y., Carrión-Otero, O., & Fernández-Rosa, L. (2022). Knee isokinetic profiles and reference values of professional female soccer players. *Sports*, *10*(12), 204. https://doi.org/10.3390/sports10120204

Byshevets, N., Denysova, L., Shynkaruk, O., Serhiyenko, K., Usychenko, V., Stepanenko, O., & Syvash, I. (2019). *Using the methods of mathematical statistics in sports and educational research of masters in physical education and sport*.

de Oliveira, G. T., Souza, H. L. R., Prazeres, E. O., Bernardes, B. P., Patterson, S. D., Arriel, R. A., Camilo, G. B., Hohl, R., Meireles, A., & Marocolo, M. (2024). A Practical Approach for Ischemic Preconditioning Intervention in Sports: A Pilot Study for Cuff Thigh Occlusion Pressure Estimation Based on Systolic Blood Pressure. *Journal of Human Kinetics*, *91*(Spec Issue), 157. DOI: https://doi.org/10.5114/jhk/186064

Ding, X., Yang, Y., Xing, Y., Jia, Q., Liu, Q., & Zhang, J. (2024). Efficacy of lower limb strengthening exercises based on different muscle contraction characteristics for knee osteoarthritis: a systematic review and network meta-analysis. In *Frontiers in Medicine* (Vol. 11). Frontiers Media SA. https://doi.org/10.3389/fmed.2024.1442683

Edwards, J. J., Deenmamode, A. H. P., Griffiths, M., Arnold, O., Cooper, N. J., Wiles, J. D., & O'Driscoll, J. M. (2023). Exercise training and resting blood pressure: a large-scale pairwise and network meta-analysis of randomised controlled trials. *British Journal of Sports Medicine*, *57*(20), 1317–1326. https://doi.org/10.1136/bjsports-2022-106503

García-Buendía, G., Rodríguez-Perea, Á., Chirosa-Ríos, I., Chirosa-Ríos, L. J., & Martínez-García, D. (2024). Reliability of dynamic shoulder strength test battery using multi-joint isokinetic device. *Sensors*, *24*(11), 3568. https://doi.org/10.3390/s24113568

Hartill, M., Rulofs, B., Lang, M., Vertommen, T., Allroggen, M., Cirera, E., Diketmueller, R., Kampen, J., Kohl, A., & Martin, M. (2021). CASES: Child abuse in sport: European statistics–project report. *CASES: The Prevalence and Characteristics of Interpersonal*

Violence against Children within and Outside Sport in Six European Countries: UK Results.

Kabacinski, J., Szozda, P. M., Mackala, K., Murawa, M., Rzepnicka, A., Szewczyk, P., & Dworak, L. B. (2022). Relationship between isokinetic knee strength and speed, agility, and explosive power in elite soccer players. *International Journal of Environmental Research and Public Health*, *19*(2), 671. https://doi.org/10.3390/ijerph19020671

Khazaal, J. A. (2025). The Effect of Different Resistance Exercises on Physical Variables and Performance in 200 m Runners. *Indonesian Journal of Physical Education and Sport Science*, *5*(1), 103–112. https://doi.org/10.52188/ijpess.v5i1.1074

Mahmoud, A.-H. F. A. M., Hassan, M. A. J. A., & Abbas, R. A. A. (2025). The Analytical Study of the Media's Role in Creating Crises: Perspectives of Administrative Bodies in Sports Clubs. *Indonesian Journal of Physical Education and Sport Science*, *5*(1), 78–92. https://doi.org/10.52188/ijpess.v5i1.1061

Majid, R. K. (2016). *Encyclopedia of Measurements and Tests in Physical and Sports Education*. Dar Al-Fikr Al-Arabi.

Miguel, M., Oliveira, R., Loureiro, N., García-Rubio, J., & Ibáñez, S. J. (2021). Load measures in training/match monitoring in soccer: A systematic review. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 5, pp. 1–26). MDPI AG. https://doi.org/10.3390/ijerph18052721

Parraca, J. A., Adsuar, J. C., Domínguez-Muñoz, F. J., Barrios-Fernandez, S., & Tomas-Carus, P. (2022). Test-retest reliability of isokinetic strength measurements in lower limbs in elderly. *Biology*, *11*(6), 802. https://doi.org/10.3390/biology11060802

Poole, D. C., Hirai, D. M., Copp, S. W., & Musch, T. I. (2012). Muscle oxygen transport and utilization in heart failure: implications for exercise (in)tolerance. *American Journal of Physiology-Heart and Circulatory Physiology*, *302*(5), H1050–H1063. https://doi.org/10.1152/ajpheart.00943.2011

Ramadhan, R., Effendy, F., & Putra Pratama, A. (2023). Sports Education on Student Learning Motivation Seen from the Roles Involved in Sport Education Using Handball. *Indonesian Journal of Physical Education and Sport Science*, *4*(1), 22–30. https://doi.org/10.52188/ijpess.v4i1.511

Rivera-Brown, A. M., Frontera, W. R., Fontánez, R., & Micheo, W. F. (2022). Evidence for isokinetic and functional testing in return to sport decisions following ACL surgery. *Pm&r*, *14*(5), 678–690. https://doi.org/10.1002/pmrj.12815

Sapozhenkova, E. V, Kolpakov, V. V, & Tomilova, E. A. (2024). Advanced Methodologies In The Establishment Of Physiological Norms And Their Significance In Evaluating Human Health. *Human Sport Medicine*, *24*(2), 13–22. https://doi.org/10.14529/hsm240202

Schindler, I. F. S. R., Pontes, S. S., Bertoni, M. B. M., Junior, G. F., Júnior, B. R. N., de Jesus, F. L. A., & Neto, M. G. (2023). A systematic review of isokinetic muscle strength in a healthy population with special reference to age and gender. *Sports Health*, *15*(3), 328–332. doi:10.1177/19417381221146258

Shareef, Q. B., & Digham, A. G. (2022). Impact of plyometric sessions on agility for youth soccer players. *International Journal of Health Sciences*, *Special Issue*. https://doi.org/10.53730/ijhs.v6nS5.10202

Van der Woude, D. R., Ruyten, T., & Bartels, B. (2022). Reliability of muscle strength and muscle power assessments using isokinetic dynamometry in neuromuscular diseases: a systematic review. *Physical Therapy*, *102*(10), pzac099. https://doi.org/10.1093/ptj/pzac099

Wilk, K. E., Arrigo, C. A., & Davies, G. J. (2024). Isokinetic testing: why it is more important today than ever. *International Journal of Sports Physical Therapy*, *19*(4), 374. https://doi.org/10.26603/001c.95038

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