Research Paper Physical Education

Using Three Various Training Programs(PNF) to Improve The Kinetic Range and Force and their Effect on The Offensive Skills in Volleyball

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ABSTRACT

Using three various training programs(PNF) to improve the kinetic range and force and their effect on the offensive skills in volleyball) The development and advancement in all aspects of life are as a result of on going researches and studies to achieve improvement and upgrading in all aspects amongst is the sport aspect and the (PNF) exercises are considered currently the fastest and the most effective methods of increasing the flexibility and stretching of the muscles being advanced technique resulted in accelerating the nervous muscular response via stimulation of the sensory muscles, as volley ball game needs to speedy kinetic frequencies accompanied with powerful performance which is ongoing with high intensity, that the coaches and assistances should present the stretching exercises resulted in improvement the flexibility in ligaments and muscles, and the research objective to prepare(PNF)exercises in the training program and recognition of its impact in the kinetic range and force on the responsive skills in volley ball, and the research sample amounted(19) nineteen players of young of volleyball players from the specialization school of volley ball. And the training procedure was used for its suitability with the nature of the problem and after performing the force tests and then the experimental procedure on the three groups of the research, besides performing the post tests, the researcher has reached to numerous results amongst:- the stretching exercises have positive effect in developing the study variables, superiority of the third experimental group of the (PNF) exercises, the third type via differences of mathematical medians and the researcher has reached the necessity of applying the(PNF)exercises when training the players being a method leads to developing the sport performance.

KEYWORDS

Section One :

1-1definition of the research

1-21 introduction and the research importance

The tremendous development and advancement in all aspects of life are the development of on going of studies and studies to a chive advance and upgrading in all aspects amongst is the sport aspect in which scientists concern and to a chive the highest accomplishments, the sport training required special characteristics and features according to the privacy of the physical characteristic and the skills aiming to be trained via using optimum suitable means for them whose objectives go in line with the game wanted to be developed .and volley ball is one of the games covered by improvement to a great extent in the recent years especially after updating of its laws which distinguished by the accuracy of its skill performance., in spite of these skills seem easy to be performed but they required exerting a great efforts in the its accuracy thus the volley ball game is considered one of the popular games attracted a number of scientists' attention and researchers in the field of training, besides the study of adaptabilities occur as a result of using number of on going regular training methods which cause changes in the body organs and because volleyball needs fast kinetic frequencies accompanied with the powerful performance which are on going and of high intensity, we could notice via training that muscles of the players remain tight and tense that required for the specialist to render stretching exercises(PNF) under the effect of external factor could be the college , the couch or devise or assisting tools in this type could use exercises resulted in flexibility feature in muscles and ligaments, and thus the importance of the research lies via process to recognize the effect of using (PNF) exercises special via training units to improve the muscular power and the kinetic range and their effect on the offensive skills of the volley ball.

1-2 The research problem

In spite of the number of the scientific studies handling volley ball game, but aspiration still entices the opinion of the couches and those concerned to improve the performance level and to discover what is new that serve and develop the game and via the researcher experience being former athlete and instructor and work in field training, she has noticed lack of using and paying attention to the aid training means when performing (PNF) exercises of their samples and types in the preparatory part of warming-up or using these trainings. As an essential and independent training unit subjected to component of training and focusing on them as required. From this the problem of the research has illustrated via using PNF exercises, to upgrading performance via improving the muscular power. And the kinetic extent and their influence on the offensive skills of volley ball.

1-3The research objectives

1- arranging three training programs of versified PNF
2- identifying the effect of using diversified PNF exercises in developing the kinetic extent and power on the offensive skills of volley ball.

1-4 The research hypotheses:-

1- There are differences of statistic significance between pre and post tests for the research groups via using PNF and on the variables of the research.
2- There are differences of statistic significance post tests for the research groups via using PNF and on the variables of the research.

1-5The aspects of the research

1-5 -1 the human aspect/ young volley ball players of specialism school.
1-5-2 the time aspect/10/7/2013 till 7/11/2013.
1-5-3 the special aspect/ the closed hall of the specialization school/Bayaa

Section two :

2-Theoretical and similar studies

2-1Theoretical studies

2-1-1 stretching

The practicing of stretching is accessible for all regardless of

age, the individual is not in need to be in high physical condition or sport skill to practice PNF and there are number of PNF exercises that could be used in many sport activities and PNF exercises are considered currently the most fastest and more manners used in the sport field for their active role in developing flexibility and the ability for the athletes in particular.

And prolongation is defined the(muscular ability of premium and prolongation to the extent the psychological feature permitted for the muscular fibers(2:223) pointed out that prolongation is (a group of exercises performed by asset of small muscles that are characterized by short of their length to increase their flexibility degree and their ability to perform in vast kinetic weight, besides the flexibility and power of muscles, ligaments and tenors surrounding the joint and often these exercises are performed with the aid of a colleague, assistive devices or tools help to kinetic stretching via using helper contributed to increase the kinetic stretching(6:34) (11:22)

And the prolongation has three types:
1- Diastole- constancy
2- Constancy-relax- contracting, rebound

Section three :
3-The research curriculum and its field procedures
3-1 the research curriculum
The researcher used the experimental method for its suitability to achieve the research objectives. Where it is considered the most efficient method to reach reliable knowledge. Thus the researcher has depended the three coefficient group methods as reference for comparison.

3-2
The research sample was chosen deliberately of specialism school young volley ball players, where it consisted of(19) players, and the researcher has performed her main experiment and applying the training curriculum on(15) players. Thus the percentage has reached(78.97) of the origin research total As for the (four) players on whom the exploratory experiment was performed on them and the homogeneity of the research sample was done via(age, weight, height) as illustrated in table (1) which illustrated the homogeneity of the sample via the torsion coefficient. Also the researcher has performed coefficient of the research variables as illustrated in table(2)

Table-1- Illustrated the mean, standard deviation and torsion coefficient value for homogeneity.

variables	mean	Coefficient deviation	median	Torsion coefficient
Age(year)	18.19	1.2	18	o.38
Height(cm)	165.9	5.1	165	0.067
Weight(kg)	58.4	4.5	58	0.15

Table(2) Illustrated performing coefficient for the research sample in the study variables via using the disparity analyzing

Tests	Source of disparity	Total of squares	Freedom degrees	Average of the squares	Value of calculated (f)	significance
Test bending the body back ward for the body flexibility	Among the groups	1.89	2	2.38	0.72	Non-significance
	Inter groups	6.66	12	1.24	1.29	Non-significance
Tests bending forward from the standing position	Among the groups	14.31	2	1.43	0.41	Non-significance
	Inter groups	12.63	12	2.81	1.38	Non-significance
Test of stretching the body back wards ,curvation	Among the groups	1.43	2	2.01	0.37	Non-significance
	Inter groups	8.01	12	1.37	1.84	Non-significance
Test of muscular power of the legs forwards jump	Among the groups	6.31	2	4.31	0.59	Non-significance
	Inter groups	2.72	12	2.66	1.14	Non-significance
Test muscular power of the arm and shoulder throwing the medical ball	Among the groups	2.63	2	3.51	0.89	Non-significance
	Inter groups	2.81	12	2.01	1.47	Non-significance
Test of crushing beating skill	Among the groups	7.44	2	2.37	0.75	Non-significance
	Inter groups	3.07	12	1.81	1.63	Non-significance
Test of sending skill	Among the groups	8.95	2	2.31	1.92	Non-significance
	Inter groups	3.01	12	1.09	1.31	Non-significance

3-3 procedures of the main experiment:-
3-3-1 the pre-tests
The pre-tests were performed on 23/07/2013 and observing confirmation all conditions related with the tests concerned time and place and method of work for the sake as possible to create the same conditions in the post-test.

3-3-2 the training curriculum
The researcher performed the following procedures

- The purpose of the suggested prolongation exercises which aiming at improving kinetic extent and muscular ability for volleyball players.
- The researcher observing the three training curriculum in:-
- Balance between tolerance and relaxation.
- Principle of privacy in exercises.
- The sample was divided in to three experimental groups each consisted of (5) players, the first group was trained with PNF exercises, stretching- constancy, as for the second experimental group with diastole-relaxation, contraction, rebound. All these groups are performed with the aid of colleague or assistive tools in curriculum.
- Applying the training curriculum started on 3/8/2013 till 05/11/2013.
- Training prolongation exercises performed before starting the basic exercises of the curriculum that's before warm-up.
- The prolongation exercises were arranged according to the intensity used of the curriculum and according to the difficulty of the performance used.

- ❖ PNF exercises were used which included muscles of bending the body then bending the shoulder, contraction of the arms and the legs and all the body equally.
- ❖ The training curriculum was adhesive to levels when using the exercises of PNF as follow:-

1- Performing the first level:- stretching-constancy of decentralization PNF for(7-15) second then relaxation for simple moment(2-3) second immediately subjected for negative PNF then return.
2- Performing of the second level:- constancy-relaxation-contraction, means there is decentralization contraction of the muscle for (5-7) second then laxity of the muscle and decentralization contraction of the muscle from(5-7) second.
3- Performing the third level:- stretching-laxity- rebound by using stretching level with PNF accompanied with motion for(7-10) second, then simple laxity(3) second, and rebound to(5) second.

3-3-3 post –tests

After applying the training curriculum via using PNF exercises with the specified time period, the researcher presented post-tests on 7/11 2013 at the same conditions in which the post-tests were performed.

3-4 statistic means

The researcher used SPSS .

1- Mean
2- Mediator
3- Standard deviation
4- Torsion deviation
5- Disparity analysis
6- (T) test for the independent samples.

3-5 recommendations

1- The necessity of applying PNF performance when training the players being away to improve the sport performance.
2- Performing another similar study with in the frame of applying PNF exercises on another samples and(advanced - juniors)
3- Using PNF of all types as assistive elements besides training of physical abilities.

SECTION FOUR

Review Results , Analysis &Discussion

4-1 : Review pre and post- tests results for first experimental group

Table No. (3) Calculation means , standard deviation and calculated (T) value in research variables for first experimental group show the following :

Tests	Pre-test		Post- test		Calculated (T) value	Notion
Test of bending the body back	41,38	8,03	42,13	7,32	4,81	Significance
Test of bending forward from standing position	16,40	4,51	17,13	4,16	5,03	Significance
Test of extension of the torso back curvature	43,01	7,19	44,14	6,78	4,47	Significance
Test jump forward , muscles strength	1,97	0,17	2,12	2,85	6,17	Significance
Test muscles strength , arm and shoulder	5,21	1,22	6,65	1,87	5,13	Significance
Test skill of crashing beating	11,33	0,18	12,.32	1,57	5,08	Significance
Test sending skill	16,72	16,3	17,01	1,03	4,78	Significance

(Table T- value is 2,14 at free degree (14) under error level (0,05)

4-2 Review pre and post- tests results for second experimental group

((Table No. 4)) Calculation means , standard deviation and calculated (T) value in research variables for second experimental group show the following :

Tests	Pre-test		Post- test		Calculated (T) value	Notion
Test of bending the body (torso) back	42,01	7.02	43,05	7,31	4,37	Significance
Test of bending forward from standing position	16,13	4,81	17,37	4,01	5,36	Significance
Test of extension of the torso back curvature	43,83	6,01	44.16	6,25	4,18	Significance
Test jump forward , muscles strength	1,88	0,32	2,01	1,41	5,89	Significance
Test muscles strength , arm and shoulder	5,40	1,81	6,32	1,86	4,73	Significance
Test skill of decisive beating	11,00	0,20	12,67	1,41	4,18	Significance
Test trans mitting skill	15,92	1,87	16,31	1,61	5.93	Significance

(Table T- value is 2,14 at free degree (14) under error level (0,05)

4-3 Review pre and post- tests results for third experimental group

((Table No. 5)) Calculation means , standard deviation and calculated (T) value in research variables for third experimental group show the following :

Tests	Pre-test		Post- test		Calculated (T) value	Notion
Test of bending the body back	42,62	7.31	43,98	8,72	4,81	Significance
Test of bending forward from standing position	16,47	4,25	19,33	5019	5,13	Significance
Test of extension of the torso back curvature	43,51	5,87	45.63	7,81	4,47	Significance
Test jump forward , muscles strength	1,95	0,48	2,81	2,34	1,41	Significance

Test muscles strength , arm and shoulder	5,63	1,79	7,14	2,91	5,89	Significance
Test skill of crashing beating	11,37	0,41	13,61	1,28	6,31	Significance
Test of sending skill	15,66	1,48	17,12	2,08	4,87	Significance

4-4 :

Discussion of the differences of the three research group- Through the tables (3 , 4 and 5) of the pre and post-tests we notice that there is significance influence in the research tests for all the three groups .It is obvious during the calculations means for the pre and post- tests .Also we noticed that there are significance differences for the favor of post-test and the researcher attributes that to the using of lengthening exercises . She used from the beginning the principle of training and organization , besides using repetition and continuous training suits with lengthening exercises .

These exercises (PNF) lead to raising motion scope level for the joints and increase by motion speedup of the limbs in quality and quantity which is confirmed by lengthening exercises when they were used in sports activities (12:19) . Tziman Al-Khateeb stated (24 :1) that the increase in the motion of the joints and lengthening of the muscles will lead to generate great strength because these muscles which were lengthened will do their functions efficiently and produce great amount of strength due to storing the energy in the muscles tissues during lengthening stage .

(Table No. 6) Showing " F calculated Value " for the three research groups in the post-test and variables of the research

Tests	Variation sources	Total square	Free degree	Square average	Calculated (F) value	Notion
Test of bending the body back	Among groups	3,082	2	1,541	6,289	Significance
	Inside groups	5,880	12	1,244		
Test of bending forward from standing position	Among groups	4,801	2	4,31	4,310	Significance
	Inside groups	12,319	12	1,71		
Test of extension of the body back curvature	Among groups	6,751	2	4,51	7,631	Significance
	Inside groups	10,381	12	0,506		
Test jump forward , muscles strength	Among groups	4,861	2	2,801	4,098	Significance
	Inside groups	8,517	12	0,906		
Test muscles strength , arm and shoulder , throw medical ball	Among groups	5,612	2	2,801	3,971	Significance
	Inside groups	7,317	12	1,201		
Test skill of decisive beating	Among groups	4,618	2	2,603	5,013	Significance
	Inside groups	6,901	12	0,407		
Test transmitting skill	Among groups	4,339	2	1,482	6,352	Significance
	Inside groups	8,801	12	1,997		

In order to know the differences of the significance among the three experimental groups in pre & post-tests for the favor of which group , the researcher used (L. s. D Test) to identify and the results are shown in the (table No. 7)

(Table No. 7) This table shows the means differences and results of the comparison (L. s. D Test) ,and the results of the three groups of the research in post-test and variation of the research .

Tests	Experimental groups	Calculations means	Differences among teams	Notion
Test of bending the body (torso) back	2-1 3-1 3-2	43,05-42,13 43,98-42,13 43,98-43,05	0,92 1,85 0,93	Non-significance Significance Significance
Test of bending forward from standing position	2-1 3-1 3-2	17,37-17,13 19,33-17,13 19,33-17,37	0,24 2,2 1,96	Non-significance Significance Significance
Test of extension of the torso back curvature	2-1 3-1 3-2	44,16-14,44 45,63-44,14 45,63-44,16	0,02 1,49 1,47	Non-significance Significance Significance
Test jump forward , muscles strength	2-1 3-1 3-2	2,12-6,65 2,81-2,12 2,81-2,01	0,11 0,69 0,8	Non-significance Significance Significance
Test muscles strength , arm and shoulder , throw medical ball	2-1 3-1 3-2	6,12-6,65 7,14-6,65 7,14-6,32	0,33 0,49 0,82	Non-significance Significance Significance
Test skill of decisive beating	2-1 3-1 3-2	12,67-12,32 13,61-12,32 13,61-12,67	0,35 1,29 0,94	Non-significance Significance Significance
Test sending skill	2-1 3-1 3-2	16,31-17,01 17,12-17,01 17,12-1631	0,7 0,11 0,81	Non-significance Significance Significance

Tables (6 and 7) showed that the (F) calculated value is significance which indicates the existence of the differences among the three groups of the research in variation of the research . Also the table – 7 – reveals after using (L. s . D) to show the reality of the differences and which of them is the best among the three groups . This refers to the great differences for favor of the largest calculation mean .

When we notice the table (7) , it shows that the value of calculations means differences is in favor of third experimental group , method of (extroversion ,relaxation and reversion) . This method achieved preference in lengthening exercises in the third kind . The researcher attributes these differences to the experimental curriculum made which includes using of lengthening exercises (PNF) that match with the level of sample performance and their body abilities in accordance with successful experimental method resulted from special and variable exercises , besides peculiarity of the exercises which leads to promotion due to lengthening and its role in carrying out the exercises upon different times, relaxation period , laxity and then retreat for this kind of lengthening ; besides repetitions and training groups gradually .

The researcher thinks that the intensity of the performance is decisive factor to achieve positive changes during practicing the exercises ; therefore the muscles tension and strain resulted from relaxation for a period of time will be activated as odd Kolgy bodies better comparing with lengthening alone (123:10) . After stopping this contraction the muscles will be more ready for the next lengthening (24:9) . Coordination among lengthening exercises and intensity of training will show great degree of body adaptation in performance . Therefore the calculations means differences showed that third experimental group is the best one in choosing the correct lengthening exercises made by the researcher which lead to improvement in study variables performance .

Fifth Section

Conclusions &Recommendations

5-1 Conclusions:

1. The results of pre and post-tests for the three research groups showed significance differences for the favor of post-tests for all variations of the study .
2. Using lengthening exercises has positive effect in develop-

ingtest of bending the body (torso) back ,test of bending forward from standing position ,test of extension of the torso back curvature ,jump forward test ,throw medical ball test ,skill of decisive beating test and transmitting skill test .

3. Lengthening exercises have positive influence by significance differences among the results of the tests .
4. Superiority of the third experimental group in lengthening exercises (PNF) upon other two groups by showing differences in calculation means .
5. Adopting lengthening exercises is good mean for training or integral for training process .

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