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THE EFFECT OF WEIGHT AND MAXES TRAINING METHODS ON FLEXIBILITY OF FEMALE VOLLEYBALL PLAYERS OF ABADAN CITY

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ABSTRACT

The major aim of this study was to determine the effect of weight and Maxes training methods on flexibility of female volleyball players of Abadan city. The study was a quasi-experimental study in which the comparative method was used. For this purpose, 33 volleyball players in Abadan city were selected to participate in this study on a voluntary basis. Participants had been setin three experimental and a control group purposefully. Flexibility index was measured before and after the six week training program in the experimental and the control group. The Kolmogorov-Smirnov test was used to check the normality of data distribution; Analysis of covariance (ANCOVA) was used to compare the three groups. It's needed to mention that all the conducted analysis were at the $p \leq 0.05$level by using version 22 of SPSS software. According to the results can be stated that Maxes training improved the flexibility. Also, there was no significant difference between the benefits of Maxes training compared to plyometric and weight training in improving the motor-physical readiness factors.

Keywords: Maxes training, plyometric training, weight training, physical and motor fitness, flexibility and volleyball

INTRODUCTION

Benefits of exercise science has been amazingin recent years and physical readinesshave revealed an important part of the development of the science (Najafzadeh *et al.*, 2014). So that physical readiness is one of the most important needs of the athletes,

today. Athlete's physical readiness factors are very important, because they have a significant effect on the player's skills and team tactics. The ball games need a maximum repetitive activities such as jumping and fast movements among the sports fields. Hence the ballfields' players have to obtain high levels of physical readiness to achieve a successful implementation at the competitive level. Volleyball is one of the most active and most exciting sports among ball fields. Therefore, employing the most appropriate training methods is the most important action that should be used by sports experts (Singh, 2014). In this regard, Plyometric training is one of the most efficient practices associated with improving flexibility and physical energy of the athletes (Aghajani *et al.*, 2014).More coaches and sports physiologists and health care providers agreed that flexibility trainings include important part of the physical readiness, even though it is mostly overlooked when working out (Faigenbaum, 2007).Stretch is even more important for athletes to achieve high levels of muscular strength and endurance. If the goal is optimal performance, so having flexibility is one of the major factors for athletes (Cyrino, 2004).

Cyrino *et al* (2004) in a study entitled the examination of flexibility after ten weeks of resistance training had found that muscle activity may reduce the amount of flexibility reduction. Flexibility enhancement can lead to improve the serious disorders of the musculoskeletal system.

The findings of Faigenbaum *et al*. (2007) study entitled the examination of short-term effects of resistance and plyometric trainings on the implementation of 12 to 15 years old boys showed that resistance training lonely and plyometric and resistance training (combined) improved flexibility in the two groups significantly.

By reviewing the previous studies observed that there are conflicting results on the effectiveness of different training programs on the variables of athletes' physical and motor readiness as well as there were no research explaining the impact of training programs of strength, plyometric and a combination of the two types of training programs on body composition and physical and motor fitness variables (Carvalho *et al.*, 2014).therefore with regard to Iran's national volleyball teams significant progress in recent years in all age groups, scientific study of factors and indexes involved in this success and better training methods help to a

better understanding of stability, development and upgrading this position.

Finally, based on available scientific and practical evidences in terms of beneficial effects of combined plyometric and weight trainings on variables of athlete's fitness in different sports fields, it can be concluded where such studies on volleyball players, especially women, is empty. Hence the researchers set out to design and implement this research to find the effectiveness of this method of training on the physical readiness variables (flexibility).

Methods and research plan:

The present study was semi-experimental in terms of methodology, applicable in terms of purpose and prospective in terms of the time in which comparative method was used so that we could compare the effect of Maxes trainings on physical-motor readiness factors (flexibility) in girl volleyball players. In this study, available sampling was used to select the statistical sample. After installing the recall, approximately 100 female volleyball players referred to participate in this study voluntarily to participate in this study and 33 volleyball players were selected. Participants were purposefully divided into three groups of weight training (n = 11), Maxes training (n = 11) and control group (n = 11) with19-25 years old, 173-184 cm height; average weight of 56-81 kg; the average body mass index of 19-23 kg per square meter, respectively. Two groups had done weight training and Maxes training (a combination of weight training and plyometric training) for eight weeks, while the control group did not exercise. Flexibility index of the experimental and the control group were measured before and after the six week training program. Kolmogorov-Smirnov was used to test of data distribution normality. Analysis of covariance (ANCOVA) is used to compare the three groups. It's needed to mention that all the conducted analysis were at the $p \leq 0.05$level by using version 22 of SPSS software.

Overall goals

Specifying the effect and difference between weight and Maxes training on flexibility of female volleyball players of Abadan city

Secondary research purposes

Specifying the effect of weight training on the flexibility of female volleyball players of Abadan city

Specifying the effect of Maxes training on flexibility of female volleyball players of Abadan city

FINDINGS

The covariance analysis results on the effect of weight training on flexibility

Variable	Source	Sum of squares	Degrees of freedom	The mean of squares	F statistic	The significance level
flexibility	pre-test	42	1	42	3/97	0/06

	group	**107**	**1**	**107**	**10/09**	**0/006**
	Error	**183**	**17**	**10/77**		

The covariance analysis results on the effect of Maxes training on flexibility

Variable	**Source**	**Sum of squares**	**Degrees of freedom**	**The mean of squares**	**F statistic**	**The significance level**
flexibility	**pre-test**	**113**	**1**	**114**	**12/20**	**0/003**
	group	**292**	**1**	**292**	**31/45**	**0/0001**
	Error	**158**	**17**	**9/30**		

CONCLUSIONS AND RECOMMENDATIONS

Weight and Maxes training had significant effect on flexibility in this study, while there was no difference between the methods effect on flexibility. In connection with the combination training, Faigenbaum et al (2007) were examine dimplementation of physical readiness of 12 to 15 years old children after resistance trainings and plyometric trainings. The results of their study showed that flexibility (cm) in the resistance trainings group and plyometric and resistance training groups had changed and showed a significant increase in both groups. The results are in line with the findings of this study. Cyrinoet al (2004) had measured flexibility characteristics after 10 weeks of endurance training. They suggested that 10 weeks of resistance training may play a role inimproving the flexibility maintenance of different joints in pre-training levels. Therefore the results are placed in one direction. It is suggested to examine the impact of competitive levels on physiological variables, body composition, anthropometric and physical-motor readiness. For example, the characteristics of Premier League players can be compared with League one or two.

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