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RESEARCH ARTICLE

INFLUENCE OF DIFFERENT INTENSITIES OF GAME SPECIFIC CIRCUIT TRAINING ON SPEED AND AGILITY AMONG HANDBALL PLAYERS

Arun. M^{1*} and Johnson Premkumar. S^{2*}

¹Department of Physical Education, Tamilnadu Physical Education and Sports University, Chennai

²YMCA College of Physical Education, Chennai, Tamilnadu

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ABSTRACT

The aim of the study was evaluated the influence of varied intensities of game specific circuit training on speed and agility among college male handball players. We have selected thirty (30) male handball players from Alpha College of Engineering, Thirumazhisai, Chennai, Tamilnadu, India. These subjects were randomly distributed into three groups namely moderate intensity game specific circuit training group (MIGSCTG: N=10), high intensity game specific circuit training group (HIGSCTG: N=10) and control group (CG = 10). The selected Players had 3.8 + 3.1 year of playing experience and regularly participate in training prior to the commencement of this study speed and agility were selected as dependent variables. Speed was measure by 30 meter sprint and agility through T- test. Game specific circuit training group was administered 3 days per week for eight week. The collected data was evaluated using two way repeated measure ANOVA on last factor. The result of the study showed that speed and agility the groups remained unaltered significantly, indicating that there was no significant difference among the groups. It is concluded that eight weeks of game specific circuit training failed to show impact on moderate and high intensity group. However, speed and agility remained unaffected on both the training groups.

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INTRODUCTION

Speed is the quickness of movement of a limb, whether the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can express as any one of, or combination of the following: maximum speed, elastic strength (power) and speed endurance. Speed abilities are trainable to a very limited extent due to its marked dependence on the functioning of the central nervous system. In practice, therefore, speed performance are commonly improved not directly by improving the functioning of central nervous system but indirectly by improving the various factors on which the speed performance depends. It is, therefore, of great practical importance to know the factors which determine speed performance. (Singh 1991). Earlier (Chittibabu 2014) established positive correlation of sprinting performance with agility and also sprinting performance displayed negative correlation with explosive power among handball players.

Agility is the ability to change direction of the body and its parts rapidly. Agility is a combination of several athletic trails including strength, reaction time, speed of movement, power and co-ordination. Agility is very important in all activities involving quick changes in direction are fundamental to foot performance in practically all court games such as handball, tennis, badminton, volleyball and in many field games such as

soccer, speedball and basketball. These games require running agility. Agility either general or specific can be improved by increasing the athletic components (Phillip 2001).

The speed and agility are key components for handball players. Although the magnitude of proficiency will vary with each individual, learning the efficient and effective execution of these skills can improve overall handball performance. (Chittibabu 2014) assessed the position wise comparison of speed and agility among university level handball players and found that wing players found to be better in speed and agility. However, speed and explosive power showed significant difference among handball players of school boys and found that super senior boys are superior than senior and junior boys (Chittibabu 2014a, 2014b). Therefore the purpose of the study is to assess the influence of different intensities of game specific circuit training on speed and agility among handball players.

METHODS

Subjects and variables

A total of thirty (30) male Inter Collegiate Handball players were selected from Alpha College of Engineering, Thirumazhisai, Chennai, Tamilnadu, India. These subjects were

*Corresponding author: **Arun. M**

Department of Physical Education, Tamilnadu Physical Education and Sports University, Chennai

randomly distributed into three groups namely moderate intensity game specific circuit training group (MIGSCTG: n = 10), high intensity game specific circuit training group (HIGSCTG: n = 10) and control group (CG: n = 10). The mean age of the selected players was 16.85 ± 0.67 . The selected players had 3.8 ± 3.1 years of playing experience and regularly participate in training prior to the commencement of this study. Speed and agility was selected as criterion variable and tested through thirty meters dash and T test.

Training

The moderate and high intensity game specific circuit training was administered 3 days per week for eight week. All players were instructed to perform one circuit of 155 m course and their time were measured and recorded. The average time recorded was 78 seconds from which 60 to 70% load was fixed for moderate and 80 to 90% for high intensity.

Statistical technique

The collected data was evaluated using two way repeated measures ANOVA on last factor. The proposed hypothesis was tested at 0.05 level of confidence. Beside this mean and standard deviation were also calculated. SPSS statistic software package (SPSS Company, America, version 17.0) was used. The value of 0.05 was set for statistical significance.

RESULT

The findings of the present study disclose that interaction effect is not significant for speed and agility, since the obtained *F* ratio of 2.913 and 1.665 is less than the required table value of 3.3541 at $\alpha = 0.05$ for the df of 2 and 27. Therefore simple effect was not applied.

DISCUSSION

In the present study speed and agility showed no significant alteration as a result of varied intensities of game specific circuit training among handball players. Similar result is obtained earlier in the basketball specific endurance circuit training showed no effect in improving speed and agility ($p > 0.05$) of basketball players during competitive season (Akilan, Muthusubramanian and Chittibabu 2012). In this investigation varied intensities of game specific circuit training does not show any impact on speed and agility. Indeed, some research suggests that aerobic endurance training can interfere with the development of strength (Balabinis, et al., 2003) and this could potentially limit improvements in speed and explosive power (Helgerud, et al., 2001). In the present study, however, eight weeks of varied intensities did not reduce sprinting performance. This observation of no interference effect parallels the results of similar aerobic endurance training studies involving team sport (soccer) players (Helgerud, et al., 2001; Mcmillan, et al., 2005). Agility is also considered an important component in handball.

This is not surprising considering the rapid changes in movement and direction during the handball game. In the

present study varied intensities of training did not exhibit a clear improvement in sprinting speed and agility in relation to experimental group. (Latin et al., 1994) result was parallel to the findings of this study.

CONCLUSION

Moderate and high intensity training group showed no significant improvement in speed and agility after eight weeks of game specific circuit training. However they remained unaffected after eight weeks of game specific circuit training in both moderate and high intensity group.

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