

EFFECT OF PROPRIOCEPTIVE EXERCISES WITH AGILITY TRAINING ON SELECTED MOTOR ABILITIES PHYSIOLOGICAL AND SKILL RELATED PERFORMANCE VARIABLES AMONG HOCKEY MEN PLAYERS

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Abstract

The present study was undertaken to analyze the effect of proprioceptive exercises with agility training on selected skill related performance variables among hockey players. The investigator has selected sixty male inter collegiate hockey players at random from Acharya Nagarjuna University, Guntur, Andhra Pradesh. Their age ranged from 18-23 years. The subjects chosen for the study were divided into four equal groups and designated as three experimental group and control group namely Group 'A' underwent proprioceptive Exercises [PEG], Group 'B' underwent agility training [ATG], Group 'C' underwent combined proprioceptive exercises and agility training [PEATG] and Group 'D' act as control group [CG] did not participated in any of the training programme apart from their regular activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting Manual time taken (radial of the wrist). The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that three experimental groups significantly improved than control group.

INTRODUCTION

Sports has the power to change the world. It has the power to inspire. It has the power to unite people in a way that little else does. It speaks to youth in a language they understand. Sport can create hope where once there was an only despair. But to inspire the next generation, we need the right professional to lead and coach them in sports (Nelson Mandela).

Proprioceptive exercises refer to sense the body position during movement without having look on the position is known as sense of proprioception. The players to response accurate movement during play time, the proprioception need to transmit the sense of position analyze that received information and response (Consciously or unconsciously) (Houghlum, 2001). Proprioceptive exercises include agility, balance and coordination; theses exercises train the mind, muscles and

nerve to react correctly to external situation and to identify correctly where the body is moving and how the body is moving (Gajannana 2013).

The player's ability to change the whole body with change of velocity towards required direction by using combination of speed, balance, coordination, strength, endurance, reflexes and stamina is known as agility (Veeramani 2016).

Motor ability may be defined as motor fitness variables. Motor fitness include all ten components of physical fitness, four basic fitness components (muscular strength, muscular endurance, cardiovascular endurance and flexibility), one health related fitness components and five motor performance components including five additional components (agility, speed, power, balance and reaction time). In order to improve the hockey players best performance level in hockey, Motor fitness variables of the hockey players play important role and from strong base for sports performance. In other words motor fitness means efficiency of basic movements in addition to the physical fitness.

Objective of the study

1. To investigate the impact of proprioceptive exercises on selected motor abilities, Physiological and field hockey skill related performance variables of Hockey players.
2. To investigate the impact of agility training on selected motor abilities, Physiological and field hockey skill related performance variables of Hockey players.
3. To investigate the impact of proprioceptive exercises with agility training on selected motor abilities, Physiological and field hockey skill related performance variables of Hockey players.
4. To compare the impact of proprioceptive exercises, agility training and proprioceptive exercises with agility training on selected motor abilities, Physiological and field hockey skill related performance variables of Hockey players.

Statement of the problem

The purpose of the present study was to find the impact of proprioceptive exercises with agility training on selected motor abilities, physiological and field hockey skill related performance variables among Hockey players.

Hypothesis

The present study tests the following hypothesis

1. It was hypothesis that impact of proprioceptive exercises, agility training and proprioceptive exercises with agility training on selected motor abilities namely agility, balance, coordination, speed and explosive power would be significantly improve when compared with control group.

2. It was hypothesis that impact of proprioceptive exercises, agility training and proprioceptive exercises with agility training on selected physiological variables namely breath holding time, resting pulse rate and blood pressure would be significantly improves when compared with control group.
3. It was hypothesis that impact of proprioceptive exercises, agility training and proprioceptive exercises with agility training on selected skill related performance variables namely dribbling and goal shooting would be significantly improves when compared with control group.
4. It was hypothesis that proprioceptive exercises with agility training would be superior than the prorioceptive exercises group and agility training group on selected motor abilities, physiological and skill related performance variables of Hockey players.

Delimitation

The study was delimited to the following aspects

1. The study was delimited to 60 men inter collegiate Hockey players from Acharya Nagarjuna University, District Guntur, State Andhra Pradesh.
2. The selected hockey players was simplified into four groups namely Proprioceptive exercises group (PEG), Agility training group (ATG), Proprioceptive exercises with agility training group (PEATG), control group (CG) and each group consists of 15 Hockey players,
3. The selected Hockey players age ranged from between 18 to 23 years.
4. The selected motor abilities variables delimited namely agility, balance, coordination, speed and explosive power.
5. The selected physiological variables delimited namely breath holding time, resting pulse rate and blood pressure.
6. The selected skill related performance variables delimited namely zig zag dribbling and goal shooting.
7. The experimental treatment assigned to Proprioceptive exercises, Agility training and Proprioceptive exercises with agility training to the experimental group I, experimental group II and experimental group III respectively, training period program restricted for 12 weeks (alternative days).
8. The selected criterion variables of motor abilities (balance, coordination, speed and explosive power) , physiological (breath holding time, resting pulse rate and blood pressure) and skill related performance variables (zig zag dribbling and goal shooting) were tested by standardized testing procedure.

Limitations

- 1.The climate, living area condition, diets, habits, family heredity, life style, physical posture and psychological such as emotional status and motivational factors of the selected Hockey players were limitation for the study.

2. The Socio economic and cultural background of the selected Hockey players was considered as limitation for the study.
3. Meteorological changes in temperature, weather, climate and relative impact on the result of the study was considered as limitation of the study
4. The selected subject free play and routine work was considered limitation for the study.
5. The general mood and environmental factors at the time of collecting data pre and post test of the subjects and which was recognized as a limitation.

METHODOLOGY

Selection of subject

To achieve the purpose of the study N=60 sixty male intercollegiate Hockey players were selected at random from Archary Nagarjuna University, District Guntur, State Andhra Pradesh. The age of the selected hockey players was ranged between 18 to 23 years. The experimental treatment assigned such as Proprioceptive exercises, Agility training and combined Proprioceptive exercises with agility training.

Selection of Variables

The selected Independent and dependent variables are mention below

Independent Variables

- Proprioceptive Exercises
- Agility training
- Combined proprioceptive exercises and agility training

Dependent Variables

Motor abilities

- Agility
- Balance
- Coordination
- Speed
- Explosive power

Physiological Variables

- Resting pulse rate
- Breath holding time
- Diastolic blood pressure
- Systolic blood pressure

Hockey Skill related variables

- Dribbling
- Goal Shooting

Table – I
Criterion test and measures

	Variables	Test	Unit of measure
Bio- Motor Abilities	Agility	SEMO	In second
	Balance	Modified base test	In points
	Coordination	Scott obstacle race	In seconds
	Speed	50 yard dash	In seconds
	Explosive Power	Standing board jump	In meters
Physiological	Resting pulse rate	Manual time taken (radial of the wrist)	In numbers/minutes
	Breath holding time	Breathing holding	In seconds
	Systolic blood pressure	Sphygmomanometer	mm hg
	Diastolic blood pressure	Sphygmomanometer	mm hg
Hockey skill related variables	Dribbling	Zig Zag dribbling	In seconds
	Goal Shooting	Shooting from 16 yards	In Points

Experimental Design

The sixty male intercollegiate Hockey players were randomly selected. The selected hockey players were divided into four equal groups of fifteen (n=15) each at random and designated as Group 'A' underwent proprioceptive Exercises (PEG = I), Group 'B' underwent agility training (ATG = II), Group 'C' underwent combined proprioceptive exercises and agility training (PEATG = IV) and Group 'D' act as control group (CG = IV) did not participated in any of the training programme apart from their regular activities. The training program plan for 12 weeks in the morning session on alternative days (three days in a week), the evening session they gone for their regular Hockey practical session. The data were obtained before the training periods (pre-test) and after the completion of 12 weeks training time period (post-test).

Collection of data

The data were collected on motor abilities variables namely agility, balance, coordination, speed, and explosive power. The physiological variables resting pulse

rate, breathe holding time and blood pressure. The hockey skill related variables dribbling and goal shooting The data was collected from all the three experimental group namely proprioceptive exercise group [PEG], Agility training group [ATG], proprioceptive exercises with agility training group [PEATG] and control group [CG] before training period (Pre test) and after completion twelve weeks of the training period (post test) respectively.

Statistical Procedure

The data was collected from the four groups namely PEG, ATG, PEATG and CG before and after the completion of training period on selected motor abilities, physiological, and field hockey skill related performance variables among Hockey players. Analysis of Co Variances (ANCOVA) was applied to find out the significant differences among all the groups in the selected variables. Wherever the adjusted post-test means were found significant, the Scheffe's post hoc test was applied to find out the paired means difference. All the data were analyzed using computer with SPSS statistical packages. The level of significance was fixed at 0.05 level of confidence.

Conclusion

On the basis of the interpretation of data, the following conclusions were drawn from the study.

Motor abilities variables

1. The motor abilities variables namely agility, balance, coordination, explosive power and speed were found significant improvement for the three experimental groups when compared to the control group.
2. The proprioceptive exercises with agility training group was better than the proprioceptive exercises group and agility training group on agility, coordination and speed.
3. The agility training group was better than the proprioceptive exercise group on agility and speed.
4. Proprioceptive exercises with agility training group was better than the agility training group on balance.

Physiological variables

1. The three experimental groups significantly improved physiological variables namely resting pulse rate and breath holding time when compared with the control group.
2. There was no significant change on diastolic and systolic blood pressure due to the proprioceptive exercises, agility training and proprioceptive exercises with agility training.

Skill related variables

1. The selected skill related variables namely dribbling and goal shooting were found significant improvement for the three experimental groups when compared with control group.
2. Proprioceptive exercises with agility training group was better than the proprioceptive exercises group and agility training group on dribbling and goal shooting.
3. There was no significant difference between proprioceptive exercise group and agility training group.

Recommendations

The following recommendations are made on the base of result of the present study

1. The proprioceptive exercises, agility training and proprioceptive exercises with agility training improved agility, balance, coordination, speed, explosive power, resting pulse rate, breath holding time, systolic blood pressure, diastolic blood pressure dribbling and goal shooting for the hockey players. So the researcher recommended the trainers and coaches of hockey game to introduce these training for hockey player's betterment.
2. Similar study is necessary to examine the effect of proprioceptive exercises with agility training on selected motor, physiological and skill related performance variables for different age group.
3. The same study may be replicate with female hockey players.
4. Similar studies may be continue with changes in training load for longer duration.
5. Similar study may also be conducted to find out the effect of proprioceptive exercises with agility training on other variables psychological, bio chemical, skill related performance of other games and physiological.

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