

An abstract of the dissertation of **ANCY EMMANUEL** submitted for the degree of Doctor of Philosophy in Physical Education at Tamil Nadu Physical Education and Sports University, Chennai.

**TITLE:**

**“PREDICTION OF HOCKEY PLAYING ABILITY FROM SELECTED  
PHYSICAL FITNESS, PHYSIOLOGICAL, BIOCHEMICAL AND  
GAMES SKILL VARIABLES”**

**Approved by:** \_\_\_\_\_

**Dr. Mrs. GRACE HELINA**

To achieve the purpose of the study, the investigator selected 100 women hockey players who competed at district level hockey tournaments from Chennai, Thiruvallur and Kancheepuram districts. The subjects selected were in the age group between 18 to 25 years.

In this study, the hockey playing ability was predicted for 100 women hockey players with the help of selected predictor variables such as speed, agility, resting pulse rate, vital capacity, high density lipoprotein, low density lipoprotein, dribbling and hitting and dribbling and goal shooting. The hockey playing ability was determined by subjective rating of the girls by three experts and was used as the criterion variable. The backward selection in multiple regression method was used to determine the prediction equation (Thomas and Nelson, 1990)

The results showed significant relationship between hockey playing ability of women hockey players and physical variables agility and speed; physiological variables vital capacity and resting pulse rate; biochemical variables HDL and LDL and skill variables, dribbling and hitting and dribbling and goal shooting accuracy.

The multiple regression analysis proved that the playing ability of women hockey players could be successfully predicted from the selected physical, physiological, biochemical and skill variables and the obtained equation was as below:

$$\text{Playing ability} = 142.1914 - 1.3203 (\text{Dribbling and Hitting}) - 1.4497 (\text{Speed}) + 0.002436 (\text{Vital Capacity}) - 0.6801 (\text{Resting pulse rate}) - 0.1665 (\text{LDL})$$

## **CONCLUSIONS**

Within the limitations and delimitations of the study, the following conclusions were drawn:

1. There was significant relationship between hockey playing ability and physical fitness variables agility and speed of the women hockey players.
2. It was concluded that the hockey playing ability of women hockey players could be predicted from the selected physical fitness variables namely, agility and speed.
3. There was significant relationship between hockey playing ability and physiological variables vital capacity and resting pulse rate of the women hockey players.

4. It was concluded that the hockey playing ability of women hockey players could be predicted from the selected physiological variables namely, vital capacity and resting pulse rate.
5. There was significant relationship between hockey playing ability and biochemical variables HDL and LDL of the women hockey players.
6. It was concluded that the hockey playing ability of women hockey players could be predicted from the selected biochemical variables namely, HDL and LDL.
7. There was significant relationship between hockey playing ability and skill variables dribbling and hitting and dribbling and goal shooting accuracy of the women hockey players.
8. It was concluded that the hockey playing ability of women hockey players could be predicted from the skill variables namely, dribbling and hitting and dribbling and goal shooting accuracy.

## **RECOMMENDATIONS**

The results of this study proved that hockey playing ability can be successfully predicted through the equation obtained. It was recommended that this equation may be utilised to predict the hockey playing ability of the women hockey players.

The predicted equation may be utilised for selection of hockey players by coaches and physical education directors.

## **SUGGESTIONS FOR FURTHER RESEARCHES**

Based on the results and conclusions of the study, the following recommendations were drawn:

1. This study could be conducted with more number of predictor variables, so that more meaningful predictor variables may be selected on the regression equation to predict the hockey playing ability.
2. This study has shown that agility, speed, vital capacity, resting pulse rate, HDL, LDL, dribbling and hitting and dribbling and goal shooting are the important predictors of hockey playing ability; hence, it was suggested that the coaches and players can concentrate more on these variables for improving their performances.
3. The contribution of psychological variables such as self concept, stress and other important psychological variables could be used to predict the hockey playing ability.
4. This study may also be conducted on school boys.
5. Similar research study could be conducted on other team and individual sports and games.
6. The prediction equation determined in this research investigation could be used to select women hockey players at district level.
7. District level women hockey players, coaches and physical education teachers could use this prediction equation to determine their hockey playing ability.