

ANALYSIS OF MEDIAL TIBIAL STRESS SYNDROME (MTSS) AMONG FEMALE BASKETBALL PLAYERS IN ANDHRA PRADESH

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ABSTRACT

The purpose of the present study was to analyze the Female Medial Tibial Stress Syndrome (MTSS) Basketball game injury, injury causes and injured body parts among the participants during the 2014-15, 2015-16 and 2016-2017 respectively. The researcher analyzed the data with the help of the chi-square test (χ^2) and Yates chi square follow up test or correction test was used to find out the effect of reducing the calculated value of χ^2 as continuous compared to the corresponding value without correction. **Results:** There was significant variation between the age and severity of pain. It shows the variables are related. Further the observation of the table shows that as the age increases the severity of pain decreases. Yates correction test states that the female shin splint injury row totals of different age groups and different injury classification like mild, moderate, severe and very severe injury occurs more in senior women age group when compared to the other three age groups.

Key words: Medial Tibial Stress Syndrome, Basketball, Chi square and Yates correction test.

INTRODUCTION

According to the **Eileen McDonagh; Laura Pappano (2011)⁸**. Information, they have materialized “In 1891, the University of California and Miss Head's School played the first women's inter institutional game. Women's basketball began in 1892 at Smith College when Senda Berenson, “a physical education teacher, modified Naismith's rules for women. Shortly after she was hired at Smith, she went to Naismith to learn more about the game. Fascinated by the new sport and the values it could teach, she organized the first women’s collegiate basketball game on March 21, 1893, when her Smith freshmen and sophomores played against one another. Her rules were first published in 1899 and two years later Berenson became the editor of A.G. Spalding’s first Women's Basketball Guide. According to the Indian Basketball association Wikipedia “Basketball in India is played in most of the high schools, colleges and universities. There is considerable patronage for the game among the younger generation. Basketball in India is played by both men and women of all ages and ability.

BASKETBALL INJURIES

As this game happen to be one of top fastest game in the world which includes agility, speed, speed endurance and accuracy in shooting which reflects on mental toughness of an individual, this game have a more chance to prone for injuries in view of the fastness in the game where more rolling substitutes are allowed, actually substitutes are more than the players.

Injury

According to **Beers, Mark H., MD, and Robert Berkow, MD., (2004)¹⁵** defined as “Injury - any physical damage to the body caused by violence or accident or fracture etc. injury - any physical damage to the body caused by violence or accident or fracture etc”.

MEDIAL TIBIAL STRESS SYNDROME (MTSS)/ SHIN SPLINTS

According to **Manzi V, D’ottavio S, Impellizzeri FM., (2010)¹⁷**. They defined as, “Shin splints is the common name often given to pain at the front of the lower leg. Usually symptoms occur at the front inside of the shin bone but can arise from a number of causes. Symptoms often come on gradually and consist of pain over the inside lower part of the tibia or shin bone. There may be pain at the start of exercise which often eases as the session continues only to come back worse later in the training session or afterwards”.

METHODOLOGY

SELECTION OF THE SUBJECTS

The purpose of the study was to find out the level of injuries of Under-14, Under- 17, Under-19 and Senior female basketball players of Andhra Pradesh(A.P.) at inter district tournaments of three consecutive years. All the tournaments were organized on league cum knockout basis. Each and every age group tournament i.e. Under-14, under - 17, Under-19 and seniors were completed within three days. In each year, total 178 matches were played to decide the top four teams among the 23 districts in each age group; it means 268 matches per year and 804 matches for the period of three years (2014-15, 2015-16 and 2016-2017) respectively. Where the researcher pointed of this scenario to evaluate the injuries involved in the basketball game of different age groups.

COLLECTION OF THE DATA

The researcher had a meeting with the players, officials and organizers before commencement of the tournament to give an emphasis to all the participants regarding the injuries related to the topic and supplied standardized questionnaire to fill the details and submit after completion of the tournament through the manager, meanwhile the researcher with the help of the qualified medical personnel evaluated the severity of the injury and recovery process from the respective injuries. The collected data were systematically cross checked with the basketball players’ face – to – face to ensure the accuracy of the completed questionnaire. This helped the investigator to classify injuries into different categories of mild, moderate severe and very severe. The data collected from different sources of Under-14, Under-17,Under-19 and Seniors Male and Female

basketball tournaments held at different places of consecutive three years from 2014 to 2017, helped the researcher to prepare this thesis more effective and comparative analysis.

For this study the researcher obtained the general information about name, age, height, weight, sex, district they belong, type of tournament, type of injury and severity of the injury, training experience etc. through standardized questionnaire from the injured players.

STATISTICAL TECHNIQUE

The researcher analyzed the data with the help of the chi-square test (χ^2) is a measure of how far the observed counts in a two-way table or contingency table are from the expected counts. These tables provide a foundation for statistical inference, where statistical tests question the relationship between the variables on the basis of the data observed. Yates chi square follow up test or correction test was used to find out the effect of reducing the calculated value of χ^2 as continuous compared to the corresponding value without correction.

ANALYSIS ON THE FEMALE MTSS & INTERPRETATIONS

FEMALE: The data collected on shin splint injury of female was analyzed by following two variable chi square analysis (4 X 4) and the results are presented in table-I.

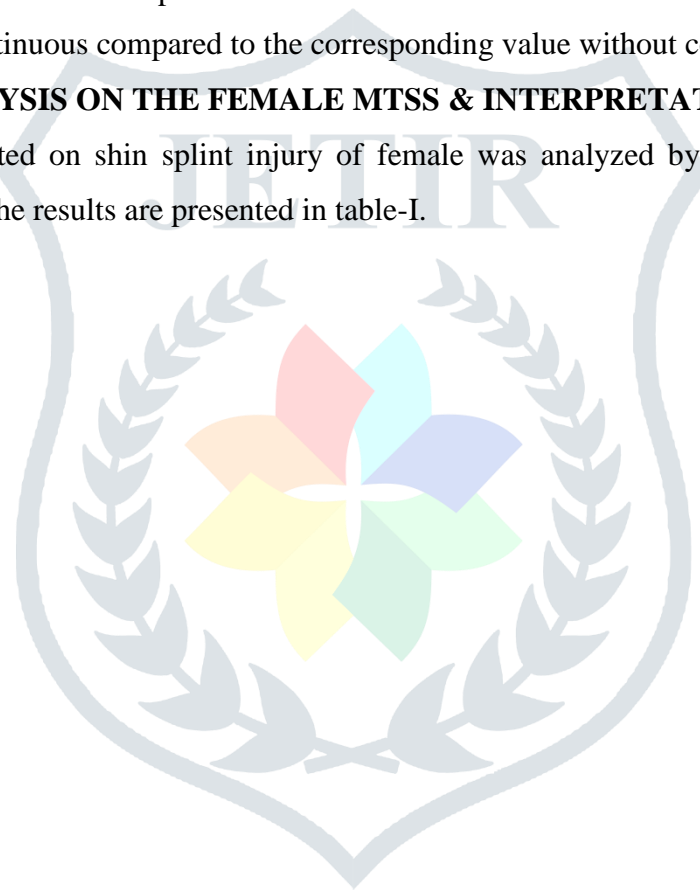


Table - I**4 X 4 CHI SQUARE ANALYSES OF THE DATA ON SEVERITY OF MTSS INJURY AMONG FEMALE SELECTED AGE GROUPS**

CATEGORY	MILD	MODERATE	SEVERE	V.SEVERE	ROW TOTAL
U-14	40 42.83	26 21.89	10 9.83	3 4.41	79
U-17	26 34.15	17 17.45	14 7.8	6 3.5	63
U-19	30 28.73	14 14.68	5 6.59	4 2.97	53
SENIOR	39 29.27	12 14.96	2 6.72	1 3.03	54
COLUMN TOTAL	135	69	31	14	249
X² VALUE = 19.25					

Summary of the Table I indicates that the calculated chi square value for the variations in age and severity of pain was 19.25. The table value for significance at .05 confidence with 9 degrees of freedom was 16.09. Hence the obtained value is more than the table value. There was significant variation between the age and severity of pain. It shows the variables are related. Further the observation of the table shows that as the age increases the severity of pain decreases.

Table – II**YATES X² CORRECTION CONTINUOUS TEST WITH p=0.05 OF FEMALE MTSS**

CATEGORY	MILD	MODERATE	SEVERE	VERY SEVERE	ROW TOTAL
14 YEARS	0.187162	0.771038	0.002757	0.467988	1.428944
17 YEAR	1.947808	0.012007	4.832621	1.705434	8.49787
19 YEAR	0.055694	0.032112	0.387195	0.349192	0.824193
SENIOR	3.22896	0.587044	3.317874	1.36551	8.499387
COLULMN TOTAL	5.419625	1.4022	8.540446	3.888123	19.25039

This table II states that the female shin splint injury row totals of different age groups and different injury classification like mild, moderate, severe and very severe injury occurs more in senior women age group when compared to the other three age groups.

CONCLUSION & RECOMMENDATIONS

CONCLUSION

Yates X^2 square test reveals that the mild injury of shin splint occurs more in senior women when compared to the other three age groups. the moderate injury of female shin splint occurs more in Under-14 year's girls when compared to the other three age groups. that the severe injuries of female shin splint occurs more in under-17 age group when compared to the other three age groups. the very severe injury of female shin splint occurs in Under-17 year's age group girls when compared to the other three age groups. According to the table of female shin splint injury row totals of different age groups and different injury classification like mild, moderate, severe and very severe injury occurs more in senior women age group when compared to the other three age groups.

RECOMMENDATIONS

Shin splints injury is common in basketball, handball and athletics, Exercises to stretch the muscles of the lower leg are important, in particular calf stretching exercises will stretch the tibialis posterior muscle which is often associated with shin splints. Calf stretching exercises should be done both with the knee straight and bent. Strengthening exercises may also be required and these include toe raises and calf raise exercises.

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