



# PREVALENCE OF SHOULDER PAIN AMONG RECREATIONAL BADMINTON PLAYERS IN JALGOAN DISTRICT.

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## *Abstract*

**Background:-**Shoulder joint is most involved joint in Sports like Badminton. Many recreational as well as elite Badminton players suffers from shoulder pain. Shoulder pain be caused due to several reasons. Individual should be given proper training with adequate fitness and must be made aware of injury prevention techniques.

**Aim:-**To find out prevalence of shoulder pain among recreational Badminton players

**Method:-**In this study 148 recreational badminton players according to inclusive and exclusive criteria were recruited from Eklavya Krida Sankul, Jalgoan. There ages range from 10-17 yrs. The data was collected by using NPRS and SPADI questionnaires.

**Result:-**The study showed 2.56 average pain according to NPRS and total SPADI was 8.01% out of 100%.

**Conclusion:-**The study concluded that the prevalence of shoulder pain among recreational badminton player was significantly low.

**Key words:-**Recreational Badminton players, Sports injuries, numerical pain rate scale, shoulder pain and disability index

## INTRODUCTION

Badminton is a tennis-like sport which involves the use of light weight racquet and a shuttle cock. Badminton is one of the widely played sports in the world. The badminton world federation estimated that about 150 million people play the game world-wide. It is a second most played game in India. Badminton is an individual non-contact sport which requires a combination of jumps, lunges, quick changes in directions and rapid arm movements. The physical demand of badminton suggests that injuries to the limbs may be frequent occurrence. An injury is defined as episode of pain, swelling, stiffness or numbness during the game or after playing. It is common for badminton player to get injured during game. Throwing act is considered to be fairly similar in many upper extremity sports, including badminton. Throwing puts enormous stress to the shoulder joint, ligaments, rotator cuff repetitive high load may leads to over injury. Shoulder pain is common both in elite as well as recreational badminton players often leading to many hours of lost play. Unfortunately many players seem to play despite of having shoulder pain, which may lead to chronic conditions.

The sport have taken a major come back in the country due to the increasing number of people attracted by the sport for various reasons, one of which is fitness. Individual participating in informal recreational sport such as badminton engage in range of exercise level or from modest to vigorous either on a regular or an inconsistent basis which do not require systematic training or pursuit of excellence. However the absence of systematic training leads some recreational badminton players to adapt movements that seem to work properly at the onset, but later on leads them to injuries because of improper and inefficient technique. The radical increase in a number of badminton related injuries is a result of large number of individuals playing sport, who were mostly unfit and have not exercised for prolong period of time. The fitness of an individual includes general conditioning, aerobic fitness and muscular strength, particularly of the forearm and shoulder girdle.



As badminton second most played game in India it a necessary to understand the injury prevalence, so as to predict the risk factors and to set up preventive measures to prevent injuries. Also to make awareness for coaches to develop better plan for training thereby reduce risk of injury and improve training quality. The study will provide important information for badminton players to understand more about injury patter and predicting their causes so as to prevent them.

## METHODOLOGY

- ❖ MATERIAL
  - pen
  - Pencil
  - other stationary things
- ❖ POPULATION SIZE - 148
- ❖ STUDY PLACE
  - Eklavya Krida Sankul, Jalgoan
  - Shivaji Maharaj Stadium, Jalgoan
- ❖ SAMPLING METHOD - convenient sampling method
- ❖ STUDY DURATION - 6 month
- ❖ OUT COME MEASURES
  - NPRS SCALE (numerical pain rate scale)
  - SPADI (shoulder pain and disability index)

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## SELECTION CRITERIA

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### INCLUTION

- Active recreational badminton players
- Age group from 10-17 yearsBoth male and female
- Badminton playing for morethan one month
- Players who play for more than4days/week

### EXCLUSION

- players below or above 10-17 years
- Injured or recent accident .
- Any neurological disorder.
- Not willing to participate.

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## METHOD

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### PARTICIPANTS

Participants were selected after meeting inclusion criteria. there were 148 recreational badminton players both male and female and data was collected using NPRS scale and SPADI index. Participants who played Badminton an average of at least 1 hour per day, five days a week and had been playing since one month. The participants sign an inform consent form and the study procedure were approved by DrUlhasPatil College of Physiotherapy, Jalgoan

### OUTCOME MEASURES

In this study, the data were collected with questionnaires and scales. In order to determine the prevalence of shoulder pain of recreational badminton players, NPRS scale and SPADI questionnaire was used. The NPRS pain scale assessed the severity of pain and the SPADI questionnaire assessed the pain and disability score.

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## DATA ANALYSIS

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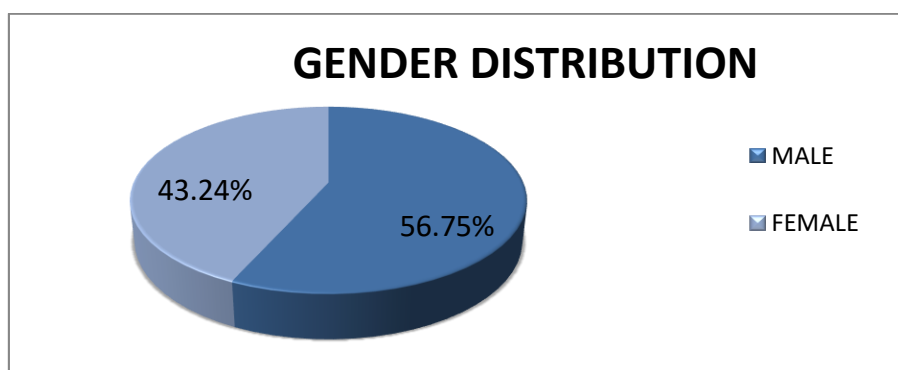
### STATISTICAL METHOD USE

The entire data of the study was entered and cleaned in MS Excel before it was statistically analyzed in GraphPadInStat. All the results are shown in graphical format to visualize the statistical significant difference more clearly. The descriptive statistic was done for gender and age groups.

TABLE NO 1:- GENDER DISTRIBUTION

MALE	FEMALE
(84) 56.74%	(64) 43.24%

GRAPH NO 1 :- GENDER DSITRIBUTION OF SUBJECTS



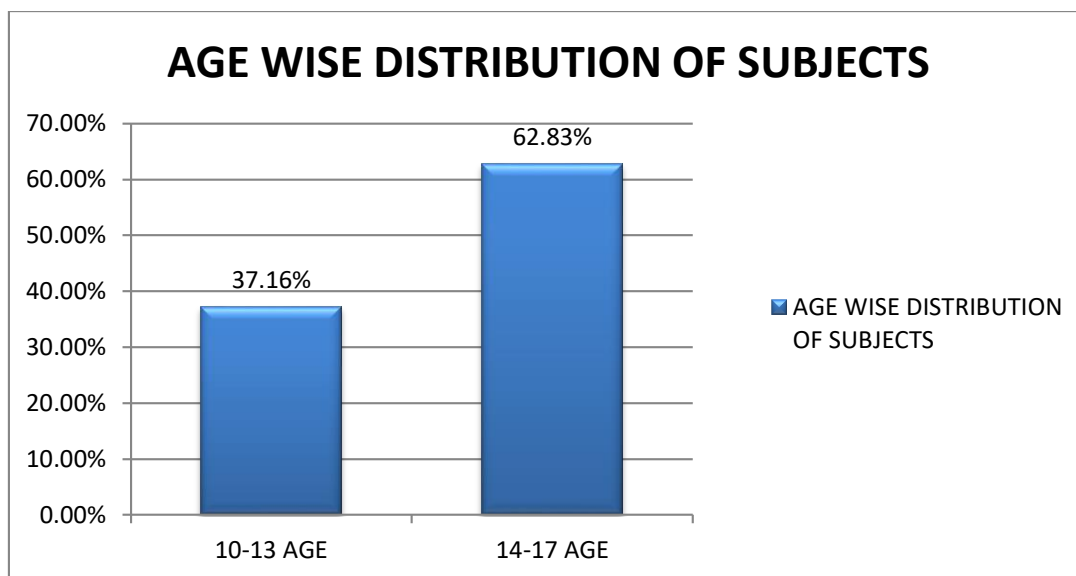
In this the table no 1 and graph no 1 shows gender wise distribution. In that total no of male participants are 84 (56.74%) and female are 64 (43.24%)

TABLE NO 2:-

AGE GROUP	FREQUENCY	PERCENTAGE
10-13	55	37.16%
14-17	93	62.83%

AGE DISTRIBUTION IF SUBJECTS

GRAPH NO 2 :-



AGE WISE DISTRIBUTION OF SUBJECTS

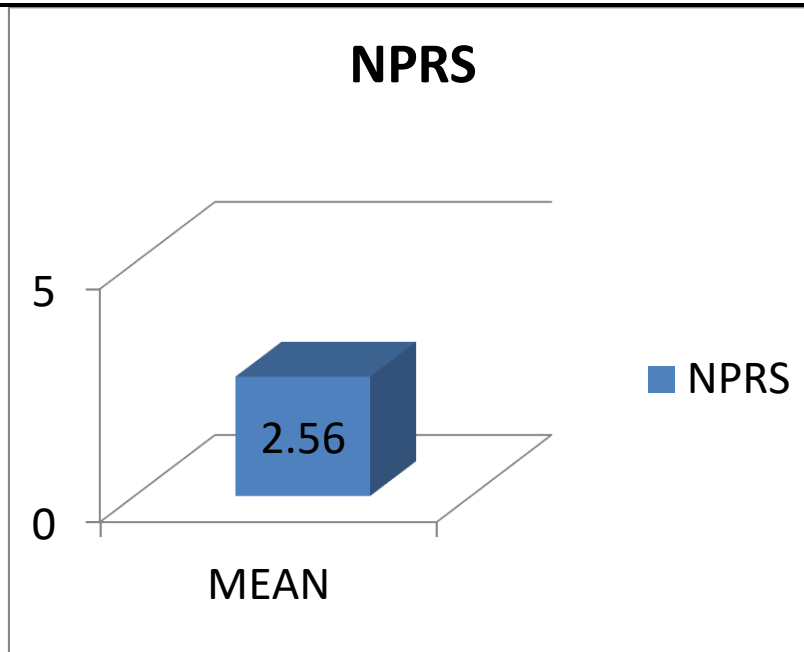
Table and graph no 2 show age wise distribution of male and female of which 55 participants are in 10-13 age group and 93 are in 14-17 age group

TABLE NO 3:-

	NPRS
MEAN	2.56

PREVALANCE OF SHOULDER PAIN ACCORDING TO NPR

GRAPH NO 3:-



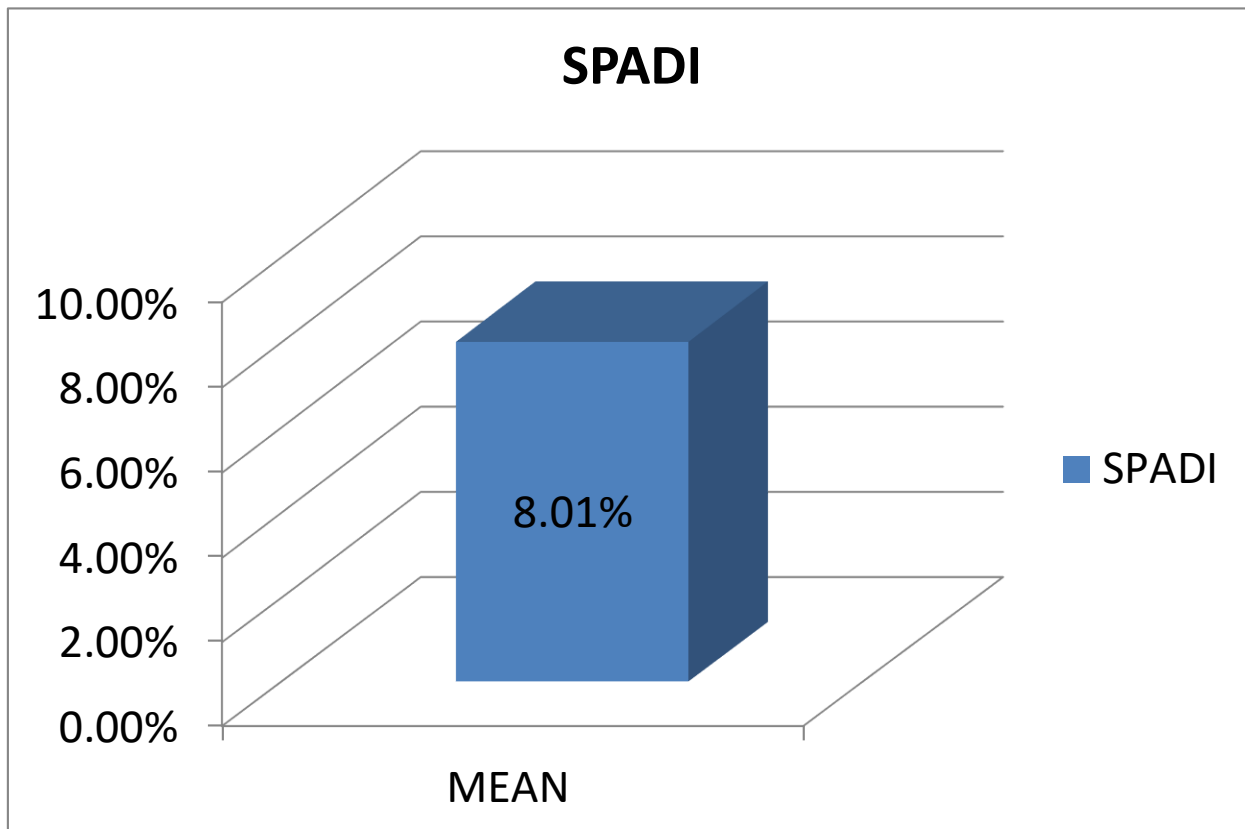
The bar diagram shows the MEAN pain score among badminton players is 2.56 out of 10.

TABLE NO 4:-

	Mean percentage
<b>PAIN SCORE</b>	11%
<b>DISABILITY SCORE</b>	4.96%
<b>TOTAL SPADI SCORE</b>	8.01%

**PREVALANCE OF SHOULDER PAIN ACCORDING TO NPRS**

GRAPH NO 4:



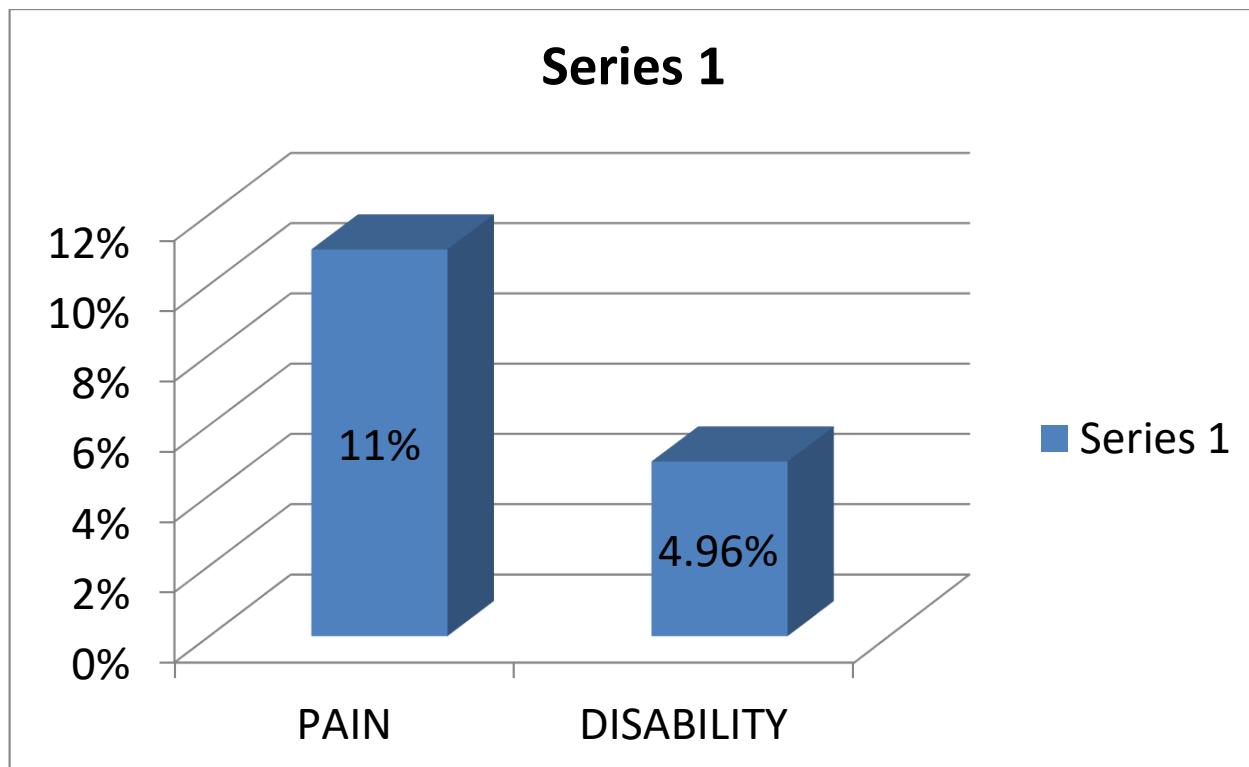
The bar diagram show that the mean percentage of the total SPADI score is 8.01% out of 100%.

TABLE NO 5 :-

COMPONENTS OF SPADI	AVERAGE MEAN
PAIN	11%
DISABILITY	4.96%

PREVALANCE OF SHOULDER PAIN ACCORDING TO SPADI

GRAPH NO 5:-



Graph no 5 show the mean of pain component (11% out of 100%) and disability component (4.96% out of 100%) of SPADI index .

## RESULT

- A total of 148 recreational badminton players participated in the study.
- The mean age of the participants was between 10-17 years.
- For the prevalence of shoulder pain, NPRS scale was used which showed 2.56 average pain score of shoulder pain was present in the subjects.
- For the prevalence of shoulder pain and disability, SPADI index was used which showed average of 8.01% of pain and 4.96% of disability was present in the subjects.

## DISCUSSION

- Shoulder joint is the most involved joint during the badminton game. Shoulder pain is most common in recreational badminton players as they lack systematic practice and proper training sessions.
- Some possible causes of shoulder injury include inadequate skill level, wrong movements, lack of warm up, muscle imbalance, stiff muscles.
- On adapting the abnormal biomechanics while playing that results in repetitive trauma to shoulder. Thus, the constant pain leads to decrease in the performance of the players.



- The present study was carried out to see the prevalence of shoulder pain using scale and questionnaire. Initially 148 subjects met the inclusion criteria were recruited into the study. Outcome measures used were NPRS scale and SPADI questionnaire.
- The age ranges between the study group was 10-17 years
- In this study subjects were 64 (56.75%) males and 64 (43.24%) subjects were females (Table1). In this study 55(37.16%) subjects were between 10-13 years of age, 93 subjects were between 14-17 years of age and (Table2). In this study, the mean average score of shoulder pain was 2.56 out of 10 . The mean average SPADI score was 8.01% out of 100%
- Chief objective was to see the prevalence of shoulder pain using NPRS scale and pain and disability using SPADI questionnaire.

The outcome measure in the study group shows following results:-

### **Variable 1 - Shoulder pain**

#### Prevalence of shoulder pain among recreational badminton players

Using NPRS scale on data (n=148) to measure the pain shows the average score of pain experienced by the participants was 2.56 out of 10 given in table and graph no 3.

The mean pain was significantly less. The pain was not severe enough to require any form of medical or surgical treatment.

As the recreational players are not exposed to the vigorous game play the injury rate is significantly less than the professional players. Moreover the age factor plays important role in the injury and the players participated in the study are young so the chances of the injury are less.

### **Variable 2 – shoulder pain and disability**

#### Prevalence of shoulder pain among recreational badminton players

The mean pain score is 11% and disability score is 4.96% out of 100% that is significantly less

Pain not only affects the performance of players but also targets their sleep quality as well as the daily activities that leads to disability.

Since the badminton requires the over-shoulder motion very often, which abducts and externally rotates the shoulder joint which generates forceful movements within short period of time frequently , that explains why players are experiencing shoulder pain.

Having proper fitness activities and training sessions lowers the chances of injury thus decreases the chances of pain and disability.

### **CONCLUSION**

Our study shows prevalence of shoulder pain among recreational badminton. So the study concluded that mean pain score of participants having shoulder pain was 2.56 out of 10 according to NPRS. And the pain and disability score according to SPADI was (8.01% out of 100%). The mean average score of pain component as (11% out of 100%) and mean of disability component was (4.96% out of 100%)

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## LIMITATION

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- Only below 17 years old population were evaluated.
- The study was restricted to only EklavyaKridaSankul and Chattrapati Shivaji Maharaj stadium, Jalgoan District.

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## FUTURE SCOPE

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- Further studies can be conducted related to other joint or condition.
- Future research can be done by recording response in the players after the training period.

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