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## Causes and prevention of injuries among basketball players

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### Abstract

Although a lot of work has been done in the field of sports injuries at international level, very few studies have been done in the field by Indian researchers. Therefore, the proposed study has been designed to understand the injuries that occur in basketball. The researcher tries to understand the causes and preventions of injuries in basketball through the proposed study. The researcher selected 100 players who had participated in inter-college basketball championship. For the required study a questionnaire was developed with the help of a panel of experts of the field. The questionnaire was sent for a trial run in order to discover whether the meaning of the questions/statements clear to the subjects or not. Percentage method was used by the researcher in order to get the result from the raw data and it was later exhibited in form of pie charts and tables with the help of MS Excel. The findings of the study pertaining to different questions have been presented graphically in form of pie charts. The results showed that Collision is ranked 1<sup>st</sup> (n=20, 29%), Lack of technique is ranked 2<sup>nd</sup> (n=15, 21%), sports equipment is ranked 3<sup>rd</sup> (n=8, 12%), ground/surface and overload share 4<sup>th</sup> rank (n=7, 10%), too much eagerness to reach the top and other reasons share 5<sup>th</sup> rank (n=5, 7%) and inadequate facility is ranked 6<sup>th</sup> (n=3, 4%). The study concluded that Majority of the basketball players prefer warm up exercise as a mean to prevent injuries from occurring, Very few basketball players prefer on/off court training or any other type of training to prevent injuries from occurring, Majority of the basketball players gets injured because of exogenous causes followed by endogenous causes, fatigue and any other causes, When we talk about exogenous cause of injuries majority of the basketball players get injured because of collision, When we talk about endogenous injuries majority of the basketball players get injured due to lack of technique, When ranking the causes of injuries to the basketball players collision is the top reason for causing injuries to the players and inadequate facility is ranked least for causing injuries to basketball players.

**Keywords:** Indian researchers, basketball players, injuries, basketball

### Introduction

In spite of the technological advancements in safety, equipment, emphasis on appropriate and physical conditioning and attention to rules, the injuries in sports are increasing. Determinants of injuries are complex, multiple and include: type of sports, equipment used, experience of players, involvement in competitions, technique of coaching and condition of playing. These components interact with the characteristics of individuals like strength, size, speed, coordination, agility, flexibility and physical fitness (Jackson, 1978) [7]. As younger athletes and professional athletes compete together, we often witness higher level of speed with which records fall but to do so one pushes their limits which has increased the chances of injury in sports (Garrick, 1978) [1].

Injuries is said to be occurred when a player is forced to discontinue play and/or practice for a predetermined length of time. In order to qualify as an injury under the ISSD, injuries must meet two criteria, (a) must occur as a result of participating in organized game or practice (b) requires medical attention by a team, athletic trainer, or physician (Pfeiffer, 2014) [2]. Like any other game, injury is a very common phenomena in basketball as it is displayed with a high intensity. The player gives their top performance in order to be in the game. In Basketball the players have to move with high speed while passing the ball or completely stop the movement when completing the pass.

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During the tackle, the player has to use their shoulder muscles and stop the ball with full speed. All these reasons can cause injuries to the player in many ways.

Although a lot of work has been done in the field of sports injuries at international level, very few studies have been done in the field by Indian researchers. Therefore, the proposed study has been designed to understand the injuries that occur in basketball. The researcher tries to understand the causes and preventions of injuries in basketball through the proposed study.

### Methodology

For the purpose of the study, the researcher selected 100 players who had participated in inter- college basketball championship. The researcher keeping in mind the feasibility criteria, availability of parameters and experts' opinion proposed two different variables.

1. Prevention of the injury
2. Causes of the injury

### Construction of the questionnaire

With the help of a panel of experts of the field a questionnaire was developed for the required study. All the questions in the questionnaire were objective in nature. Various questions were formed to get the required responses from the subjects in the first attempt and then changed/modified time to time as

per the recommendations of the experts before the final draft was created. The questionnaire was sent for a trial run in order to discover whether the meaning of the questions/statements clear to the subjects or not. It was found that the questions were adequate in order to obtain the desired information. The final draft of the questionnaire was made on the basis of received suggestions laid by the experts.

### Procedure

The researcher personally visited different colleges of Delhi University and got their approval to participate and extend sincere cooperation for the study. The subjects were asked to read the instructions carefully before responding to the questions. The purpose of the study was clearly explained to the subject. It was also made sure that all the questions were clearly understood by the subjects.

### Statistical Analysis

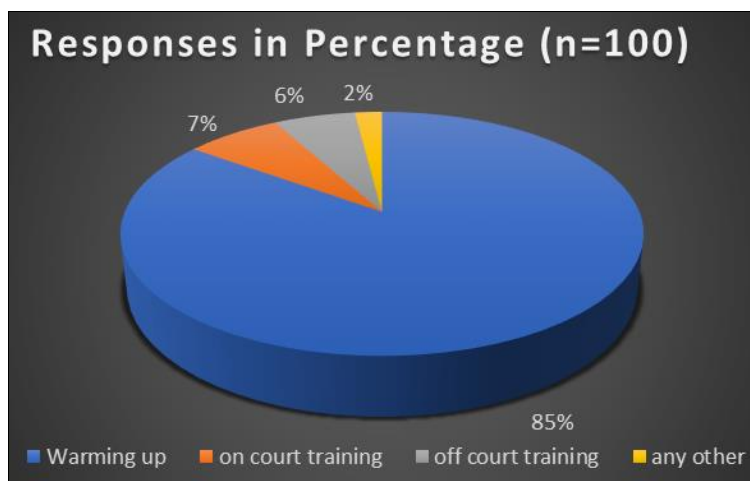
Percentage method was used by the researcher in order to get the result from the raw data and it was later exhibited in form of pie charts and tables with the help of MS Excel.

### Result of the Study

After analyzing the data, the findings pertaining to different questions have been presented from table 1 to table 5 and graphically represented in form of pie chart from figure 1 to 5.

**Table 1:** Prevention taken to avoid injuries in basketball in percentage

Measures	Responses in Percentage (n=100)
Warming up	85%
on court training	7%
off court training	6%
any other	2%



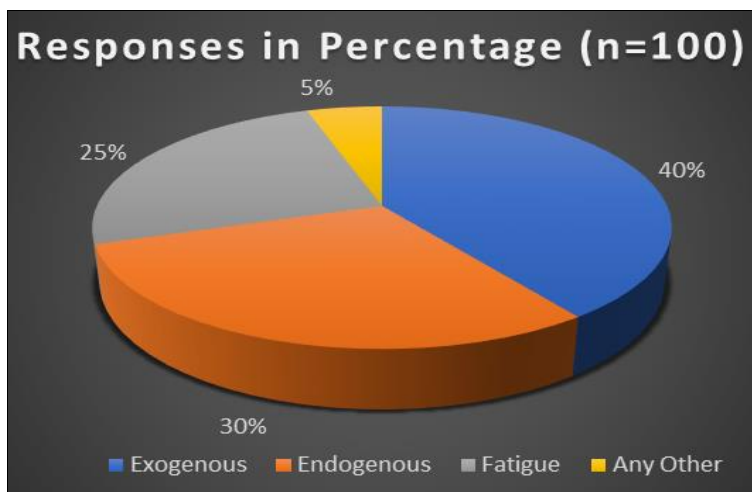
**Fig 1:** Prevention taken to avoid injuries in basketball in percentage

Table 1 and figure 1 depicts that 85% of the players do warmup exercises in order to prevent the injuries in basketball, followed by 7% players that prefers on court

training, 6% players that prefers off court training and 2% players that prefers any other training methods to prevent injuries.

**Table 2:** Causes of injuries in Basketball in percentage

Causes	Responses in Percentage (n=100)
Exogenous	40%
Endogenous	30%
Fatigue	25%
Any Other	5%



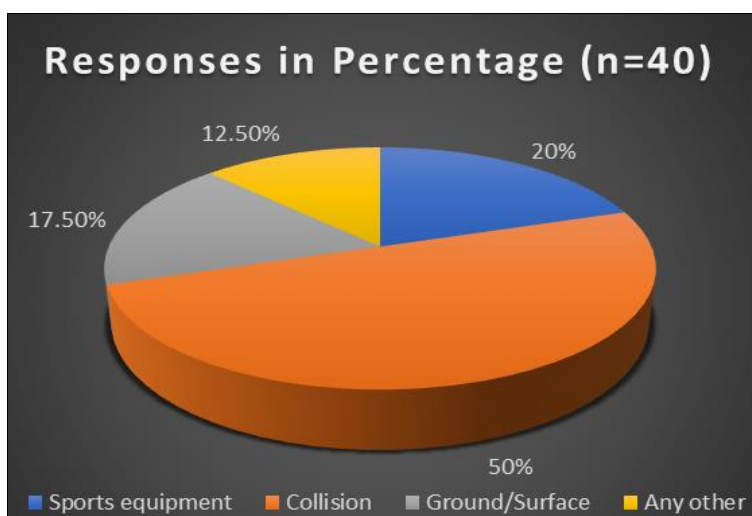
**Fig 2:** Causes of injuries in Basketball in percentage

Table 2 and figure 2 reveals that 40% of the players in basketball gets injured because of exogenous causes, 30% of the players in basketball gets injured because of endogenous

causes, 25% of the players in basketball gets injured due to fatigue and 5% players in basketball gets injured due to any other causes.

**Table 3:** Exogenous causes of the injuries in percentage

Exogenous Causes	Responses in Percentage (n=40)
Sports equipment	20%
Collision	50%
Ground/Surface	17.50%
Any other	12.50%



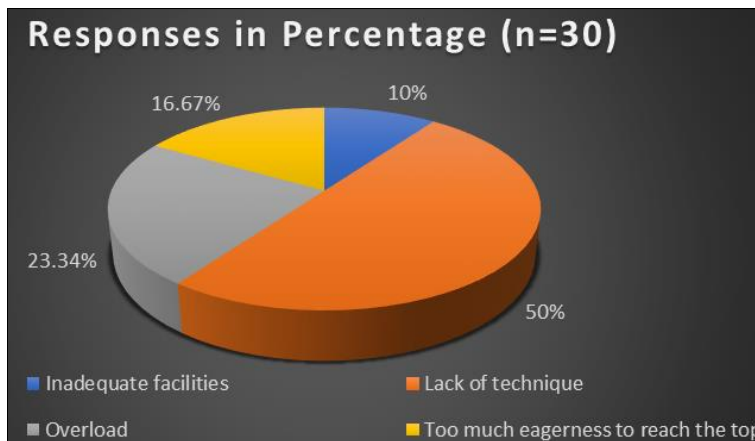
**Fig 3:** Exogenous causes of the injuries in percentage

Table 3 and figure 3 depicts that when we talk about exogenous causes of injuries 20% Of the basketball players get injured due to sports equipment, 50% of the basketball

players get injured due to collision, 17.5% of the basketball players get injured due to ground/surface and 12.5% of the basketball players get injured due to other reasons.

**Table 4:** Endogenous causes of the injuries in percentage

Endogenous Causes	Responses in Percentage (n=30)
Inadequate facilities	10%
Lack of technique	50%
Overload	23.34%
Too much eagerness to reach the top	16.67%



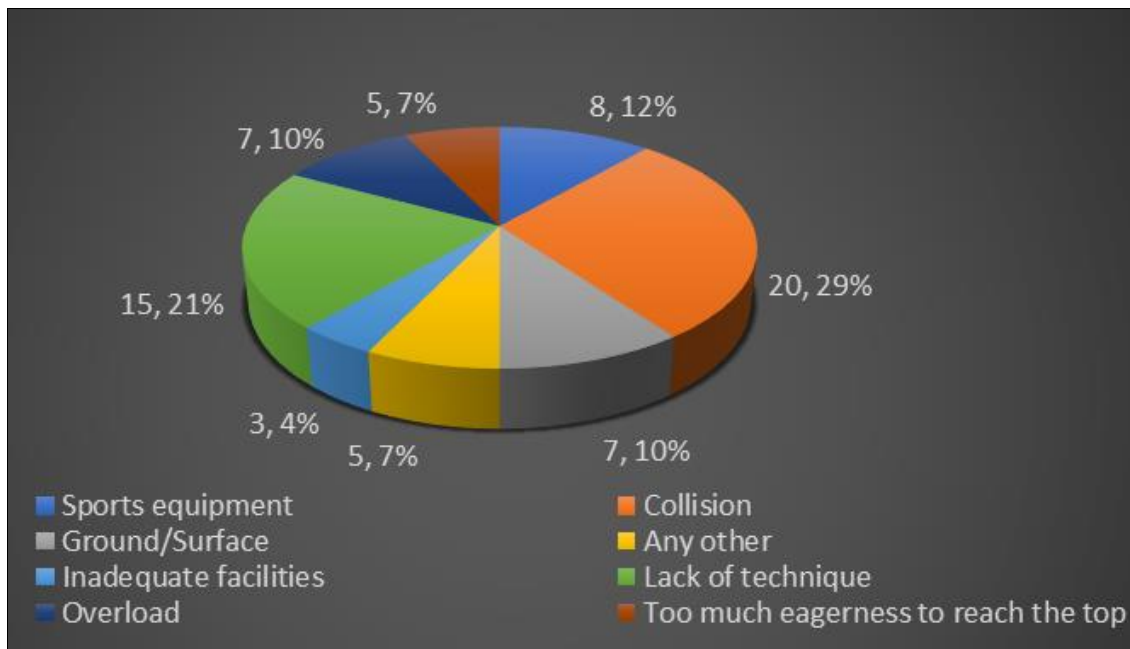
**Fig 4:** Endogenous causes of the injuries in percentage

Table 4 and figure 4 depicts that when we talk about endogenous causes of injuries 10% of the basketball player gets injured due to inadequate facilities, 50% of basketball players gets injured due to lack of technique, 23.34% of the

basketball player gets injured due to overload and 16.67% of the basketball players gets injured due to too much eagerness to reach the top of the game.

**Table 5:** Ranking table of causes of injuries in basketball

	Causes	Responses in numbers	Responses in percentage	Ranking
Exogenous Causes (40)	Sports equipment	8	11.43	III
	Collision	20	28.57	I
	Ground/Surface	7	10.00	IV (a)
	Any other	5	7.14	V (a)
Endogenous Causes (30)	Inadequate facilities	3	4.29	VI
	Lack of technique	15	21.43	II
	Overload	7	10.00	IV (b)
	Too much eagerness to reach the top	5	7.14	V (b)



**Table 5:** Ranking of causes of injuries in basketball

After the revelation of the types of injuries that basketball players get, Table 5 and figure 5 depicts the ranking of causes of injuries to the basketball players. The table and the figure shows that when we talk about the causes of injury Collision is ranked 1<sup>st</sup> (n=20, 29%), Lack of technique is ranked 2<sup>nd</sup> (n=15, 21%), sports equipment is ranked 3<sup>rd</sup> (n=8, 12%), ground/surface and overload share 4<sup>th</sup> rank (n=7, 10%), too

much eagerness to reach the top and other reasons share 5<sup>th</sup> rank (n=5, 7%) and inadequate facility is ranked 6<sup>th</sup> (n=3, 4%).

**Discussion of findings**

From the results it was revealed that 85% of the players do warmup exercises in order to prevent the injuries in

basketball, 7% players prefer on court training, 6% players prefer off court training and 2% players prefer any other training methods to prevent injuries from occurring. It was also revealed that 40% of the players in basketball gets injured because of exogenous causes, 30% gets injured because of endogenous causes, 25% gets injured due to fatigue and 5% gets injured due to any other causes.

When further explored about the exogenous and endogenous causes of injuries in basketball it was revealed in exogenous reasons of injuries 50% of the basketball players get injured due to collision, 20% gets injured due to sports equipment, 17.5% gets injured due to ground/surface, 12.5% gets injured due to other reason and in endogenous reasons 50% of basketball players gets injured due to lack of technique, 23.34% gets injured due to overload, 16.67% gets injured due to too much eagerness to reach the top of the game and 10% gets injured due to inadequate facilities.

When the reason of injuries were ranked in order the results showed that Collision is ranked 1<sup>st</sup> (n=20, 29%), Lack of technique is ranked 2<sup>nd</sup> (n=15, 21%), sports equipment is ranked 3<sup>rd</sup> (n=8, 12%), ground/surface and overload share 4<sup>th</sup> rank (n=7, 10%), too much eagerness to reach the top and other reasons share 5<sup>th</sup> rank (n=5, 7%) and inadequate facility is ranked 6<sup>th</sup> (n=3, 4%).

## Conclusions

**From the results of the study following conclusions were drawn**

1. Majority of the basketball players prefer warm up exercise as a mean to prevent injuries from occurring.
2. Very few basketball players prefer on/off court training or any other type of training to prevent injuries from occurring.
3. Majority of the basketball players gets injured because of exogenous causes followed by endogenous causes, fatigue and any other causes.
4. When we talk about exogenous cause of injuries majority of the basketball players get injured because of collision.
5. When we talk about endogenous injuries majority of the basketball players get injured due to lack of technique.
6. When ranking the causes of injuries to the basketball players collision is the top reason for causing injuries to the players and inadequate facility is ranked least for causing injuries to basketball players.

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