Effectiveness of Tailored Reaction Time Training Drills in Addition to Warm-Up Sessions on Performance Parameters in Recreational Cricket Players

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Abstract

Background: In the game of cricket, the players need very good reflexes to react to the situation. The players who plays very rarely (recreational players) end up with more injuries compared to elite players due to improper training session and warm-ups. The recreational players in over enthusiasm often end up with injury during the match. So to improve the performance of the recreational cricket players their reaction time should be improved. Thus recreational players need appropriate training and awareness of such therapeutic reaction time training drills like Ball Drop Drill, Reactive Gear Drill, Shuffle Reaction Ball Drill, Ball Catch Drill, Run Shuffle Drill, T-Drill, Multiple Slinger Drill and Mountain climber to Sprint along with regular warm up sessions are necessary for preventing injuries as well as improving the performance parameters of the cricket players.

Objective: The objective of this study was to compare the effect of conventional and tailor made Reaction Time Training Drills sessions for recreational cricket players.

Method: In this study, 26 individuals who played cricket for recreation (all male) were taken. They were equally divided into two groups i.e. Group A and Group B. Individuals in the age group of 19-30 years were included in this study, out of which 13(50%) players were in group A and 13(50%) were in group B. This consisted of those who played recreational cricket and did not have any training or experience in professional Cricket. Pre intervention and post intervention reaction time testing were taken. Group A received conventional training while Group B received Reaction Time Training Drill.

Result: There was a significant effect of reaction time training on individuals of group B compared to conventional training in group A ($p < 0.0001$).

Conclusion: The tailored Reaction Time Training Drills are effective in improving performance and preventing injuries in recreational cricket players.

Key Words: *Reaction Time Training Drill, Reaction Time Testing, Cricket , Recreational players.*

Introduction

Cricket has always been the sport of choice for most of India.[1] From young children to the old, everybody has played cricket for a good part of their life. However, most of the individuals have played cricket only for recreation.[2] They have generally played only for their schools, colleges or local cricket organisations in their area of residence.

This makes them vulnerable to a vast variety of problems. The most common of this being injuries. All of these players at least once in their lifetime have sustained an injury while playing cricket. Common cricket injuries include hamstring strain, ankle sprain, groin pull, shin splints, tennis elbow etc.[3,5,6] Most of these injuries occur due to the player failing to catch the ball, hit the ball while batting or due to stumbling while running.

These injuries again vary according to the role of the player in the sport. Batsmen usually suffer from ankle sprain while running between the wickets, Groin pull while trying to run to score a run, getting hit by the ball due to slow reaction time etc.[5,6]

Bowlers suffer from Shoulder injuries while throwing. The wrist and well as the elbow are also involved.[7] Fielders get injured due to a delay in catching the ball and in turn getting hit by the ball or because of stumbling while running to catch a ball.[8,9]

From the above mentioned injuries, it can be said that these injuries have mainly occurred due to a slow reaction time of the players.[10] Reaction time is the minimum time taken by an individual to react to a certain stimuli. This is extremely important for cricketers as the entire game is based on reacting to the stimuli, i.e. the throw of a ball within time. Any slowing of reaction time will greatly hamper their performance.

Recreational players generally focus on improving their strength and endurance. They train at the gym frequently to build up their strength. Before playing they run a few rounds around the ground and perform a few basic stretches. At time most, they'll perform some simple agility drills.

It is very important to improve the awareness about the concept of reaction time among these players. Focus needs to be put on teaching them on how to assess the speed of their own reflexes and try to improve them. A little increase in reaction time of these players will immensely improve their overall performance in the sport.[11,12] Thus, we are conducting this study to facilitate their progression in the sport.

Methodology

An approval for the study was obtained from the Protocol committee and the Institutional Ethical Committee of KIMSDU. 32 individuals were approached of which 26 were selected according to the inclusion criteria. The procedure was explained and written informed consent was taken. Exercises were explained thoroughly. Training was given half hour before the game for 3 matches. Pre and post assessment of reaction time testing (Reaction Ruler Test)[4] were taken and average was calculated in Milli seconds.

Procedure:

The players should be made ready in ground half hour before the match begins and should be well explained about the research. The studies will be conducted for 3 match series.

There will be two groups made in which the players will be equally divided.

The Group A (13 players) will be instructed about the Conventional training required before cricket match and should be told to perform for 3 matches and should be observed.

The Group B (13 players) will be instructed to perform Reaction Time Training Drill (RTTD) in addition to regular warm-up session and should be told to perform for 3 matches and should be observed.

For reaction time testing, Reaction ruler test was used. The investigator held the ruler at the very top i.e. at the '0' marker and ask the player to position their fingers at the bottom of the ruler. The investigator dropped the ruler at any time without any warning and the player had to try and grab it between their fingers. The point on the ruler where they held was marked and scored by converting the cm into milliseconds (ms). 3 consecutive scores were calculated and then mean was selected as the final score.[4]

Speed(milliseconds)	Rating
40	Pretty good
60	Average
80	Slow
>100	Very Slow

Reaction Time Training Drill (RTTD) includes:-

1. Ball Drop Drill
2. Reactive Gear Drill
3. Shuffle Reaction Ball Drill
4. Ball Catch Drill
5. Run Shuffle Drill
6. T- Drill
7. Multiple Slinger Drill
8. Mountain Climber to Sprint

Result:

1) Age wise distribution

Group A			**Group B**			**TOTAL**
Players	Percentage	Mean±SD	Players	Percentage	Mean±SD	
13	50%	21.38 ±2.69	13	50%	22±1.29	26

Table 1: Distribution of players according to age

Interpretation: Table no.1 shows that, the mean age group of players in Group A was 21.38 ±2.69 years and that of Group B was 22±1.29.

2) Role wise distribution

Role	**Group A**		**Group B**	
	Players	**Percentage**	**Players**	**Percentage**
Batsman-Fielder	6	46.1%	4	30.7%
Bowler-Fielder	4	30.7%	4	30.7%
All-rounder	3	23.07%	5	38.46%
TOTAL	13	100%	13	100%

Table 2: Distribution of players according to their role in the sport

Interpretation: Table no.2 shows that ,in group A 6 (46.1%) players were batsman-fielder, 4 (30.7%) were bowler-fielders and 3 (23.07%) were all-rounder. In group B, 4 (30.7%) players were batsman-fielder, 4 (30.7%) were bowler-fielders and 5 (38.46%) were all-rounder.

3) Distribution of reaction time testing scores in Group A and Group B pre and post intervention

GROUP	**Mean±SD**	
	Pre Intervention	**Post Intervention**
Group A	149.9±27.63	148.8±25.63
Group B	145.7±26.25	104.84±20.70

Table 3: Distribution of reaction time testing scores in Group A and Group B pre and post intervention

Interpretation: Table no.3 shows that, the mean reaction time test scores for players in group A pre and post intervention were 149.9±27.63 and 148.8±25.63 respectively. For group B the mean scores were 145.7±26.25 and 104.84±20.70 respectively.

4) Association between Reaction time testing scores of Group A and Group B with themselves Pre and post intervention

GROUP	Paired t-test	
	t-value	p-value
Group A	2.915	0.0129(S)
Group B	9.842	<0.0001(ES)

Table 4: Association between Reaction time testing scores of Group A and Group B with themselves Pre and post intervention

Interpretation: Table no.4 shows that, the association between reaction time test scores of Group A pre and post intervention, according to paired t-test, had a p-value of 0.0129(S) with a t-value of 2.915. For Group B, paired t-test had a p-value of <0.0001(ES) with a t-value of 9.842.

5) Association between Reaction time testing scores of Group A and Group B with themselves Pre and post intervention

Reaction Time Testing	Unpaired t-test	
	t-value	p-value
Pre Intervention	0.3929	0.6979(NS)
Post Intervention	4.814	<0.0001(ES)

Table 5: Association between Reaction time testing scores of Group A and Group B with themselves Pre and post intervention

Interpretation: Table no.5 shows that, the association between reaction time test scores of Group A and Group B before intervention, according to unpaired t-test, had a p-value of 0.6979(NS) with a t-value of 0.3929. After intervention, paired t-test had a p-value of <0.0001(ES) with a t-value of 4.814.

Discussion

In the game of cricket, the players need very good reflexes to react to the situation. The players who plays very rarely (recreational players) end up with more injuries compared to elite players due to improper training session and warm-ups. The recreational players in over enthusiasm often end up with injury during the match. So to improve the performance of the recreational cricket players their reaction time should be improved.

Thus recreational players need appropriate training and awareness of such therapeutic reaction time training drills like Ball Drop Drill, Reactive Gear Drill, Shuffle Reaction Ball Drill, Ball Catch Drill, Run Shuffle Drill, T-Drill, Multiple Slinger Drill and Mountain climber to Sprint along with regular warm up sessions are necessary for preventing injuries as well as improving the performance parameters of the cricket players.

The aim of this study was to find the effectiveness of Reaction Time Training Drill in addition to warm-up sessions on performance parameters in recreational cricket players.

The objectives of this study were to find out the effect of conventional training in addition to regular warm-up on recreational cricket players, to find out the effect of Reaction Time Training Drills in addition to

warm-up sessions on recreational Cricket players.

The objective was also to compare the effect of conventional and tailor made Reaction Time Training Drills sessions for recreational cricket players.

In this study, 26 individuals who played cricket for recreation (all male) were taken. They were equally divided into two groups i.e. Group A and Group B. Individuals in the age group of 19-30 years were included in this study, out of which 13(50%) players were in group A and 13(50%) were in group B. This consisted of those who played recreational cricket and did not have any training or experience in professional Cricket. The mean age for players in group A was 21.38 years and that for players in group B was 22 years.

The players were distributed according to their roles in the sport. Out of the 13 players in group A, 6 (46.1%) were batsmen-fielders, 4(30.7%) were bowler-fielder and 3(23.07%) were all-rounder. Out of the 13 players in group B, 4(30.7%) were batsmen-fielders, 4(30.7%) were bowler-fielder and 5(38.46%) were all-rounder.

In Group A, the subjects were given only conventional training along with regular warm-up session for improving reaction time before 3 matches individually and in Group B, the subjects were given reaction time training drills along with regular warm-up session before 3 matches individually. Reaction time testing was done for all the players before and after the training session respectively. The mean reaction time test scores for players in group A, pre and post intervention were 149.9ms and 148.8ms respectively. For group B the mean scores were 145.7ms and 104.84ms respectively..

Statistical analysis of the reaction time testing scores pre and post intervention of both the groups individually i.e. intra group analysis was done to confirm that the difference between the pre and post measurements is significant. Paired t-test was used. The comparison for pre and post scores for group A was found to have a p-value of 0.0129(S) which was significant and group B was found to have a p-value of <0.0001(ES) which was extremely significant.

This shows that there was a significant improvement in the reaction times of the players after administration of the training in both group A and group B. But the improvement in the scores of group B was more significant compared to those of group A. This may be due to the fact that the players in group B received advanced reaction time training drills along with warm-up sessions which greatly improved their performance compared to group A which received only conventional training.

Statistical analysis of the reaction time testing scores pre and post intervention was also done between both the groups i.e. inter group analysis was done to confirm that the difference between the pre and post measurements is significant. Unpaired t-test was used. The comparison for pre intervention scores of group A and group B was found to have a p-value of 0.6979(NS) which was not significant and post intervention scores of group A and group B was found to have a p-value of <0.0001(ES) which was extremely significant.

This shows that there was a considerably significant difference in the scores of both the groups thus showing that the improvement in group B was significantly more than that of group A.

This study will also improve the postural stability of players and by performing the drills before every match will give them habit of having controlled movements which is very much required in the game of cricket. Thus, there was a significant improvement in their performance parameters. This will also improve their confidence and in turn their performance.

This knowledge will help us to improve the training administered by the coaches at small institutions thus improving the performance of these players greatly. This will in turn improve their chances of participating in esteemed tournaments all over the nation.

Conclusion

On the basis of the results of the study, there was significant difference in the reaction time testing (Reaction Ruler Test) score of group B than that of group A which shows that Reaction Time Training Drills is effective in improving performance of recreational cricket players.

Conflict of Interest: There were no conflicts of interest in this study

Ethical Clearance: Ethical clearance was taken from institutional committee of Krishna Institute of Medical Sciences, Deemed to be University, Karad.

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