

Prevalence of Postural Deviation Found in Cricket Players

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ABSTRACT

Cricket, a sport demand exceptional bodily ability, frequently overlooks the impact of postural fitness on its players. The researcher pursuits to bridge the gap by investigating postural deviation found in cricket player. via a static postural assessment, the prevalence and kinds of deviation among bowlers and batsmen have been examined. Notable difference was found, with bowlers exhibited a higher occurrence of anterior pelvic tilt (48%), Asymmetrical shoulder level (40%), and scapular deviation (34%) compared to batsmen suggesting different biomechanical stresses inherent in bowling. Conversely, batsmen displayed a higher occurrence of kyphosis (32%), forward head posture (24%), and forward shoulder head posture (12%) likely due to the repetitive upper body movements concerned in batting. moreover, batsmen showed a higher incidence of head tilt (18%), and bowlers showed a higher prevalence of flat foot (18%). Further studies are necessary in order to go deeper into these variations to know why they take place as well as to create effective measures to improve postural health among cricketers who have a need for their personal athletic capacities to be optimized.

Keywords: Postural deviations, cricket, static postural assessment, plumbline, P-MPA.

INTRODUCTION

Cricket is a sport that demands exceptional physical prowess, agility, and endurance from its players. From the explosive power required for fast bowling to the precise coordination needed for batting and fielding, cricket places significant strain on the musculoskeletal system of its participants. While much attention has been given to the technical and tactical aspects of the game, less focus has been placed on the potential impact of cricket on the postural health of its players. This study aims to address this gap by conducting a survey to investigate the postural deviation found in cricket players. By systematically examining the postural characteristics of cricket players, this research seeks to shed light on the extent of postural issues within the cricketing community and additionally identifying common postural deviation.

OBJECTIVE

- O Determine the prevalence of postural deviation among Bowler
- O Determine the prevalence of postural deviation among Batsmen.
- O To determine the difference of postural deviation found in bowler and batsmen
- O To determine the type of postural deviation found in cricket players

MATERIALS & METHODS

METHODOLOGY

The following methodological steps were taken to conduct the present study

SAMPLE

The research will focus on active cricketers, specifically batsmen and bowlers, with a minimum age requirement of 18 to 25 years for male participants. The sample size will consist of 100 players, evenly divided into 50 bowlers and 50 batsmen.

TOOL

This research include posture, P-MPA (Photographic method of postural assessment) create by Dr Joseph Pilates, and the plumbline method.

PROCEDURE

A] P-MPA

1. Preparation:

○ Set up a designated area with sufficient space and adequate lighting for taking photographs.

○ Ensure that the background is plain and contrasts well with the subject's clothing to facilitate postural analysis.

2. Participant Positioning:

○ Instruct the participant to stand barefoot on a flat surface with their feet hip-width apart and arms relaxed at their sides.

○ Ask the participant to stand in a relaxed, natural posture, with their weight evenly distributed between both feet.

○ Ensure that the participant's head is facing forward, with the chin parallel to the ground.

3. Camera Setup:

○ Position the camera at a standardized distance and height from the participant to ensure consistent framing and perspective in the photographs.

○ Use a tripod to stabilize the camera and minimize blurring in the images.

○ Set the camera to a neutral focal length and adjust the aperture and shutter speed settings to achieve optimal exposure.

B] Plumbline-

□ Preparation:

○ Choose a well-lit area with enough space for the participant to stand comfortably.

○ Position a plumbline or weighted string vertically from the ceiling or a stable

overhead structure. Ensure that the plumbline hangs freely and does not sway or move easily.

□ Participant Positioning:

○ Instruct the participant to stand barefoot on a flat surface with their feet hip-width apart and arms relaxed at their sides.

○ Ask the participant to stand in a relaxed, natural posture, with their weight evenly distributed between both feet.

○ Ensure that the participant's head is facing forward, with the chin parallel to the ground.

□ Placing the Plumbline:

○ Position the plumbline in such a way that it aligns with specific anatomical landmarks relevant to postural assessment.

○ Typically, the plumbline is aligned with the following landmarks:

○ Midpoint between the eyes (for assessing head position)

○ Midpoint of the acromion process (for assessing shoulder alignment)

○ Midpoint of the greater trochanter (for assessing pelvic alignment)

○ Midline between the knees and ankles (for assessing lower limb alignment)

□ Observation and Evaluation:

○ Stand behind the participant and visually inspect the alignment of the plumbline with the selected anatomical landmarks.

○ Assess whether the plumbline passes through or near the selected landmarks, indicating proper alignment, or if it deviates to one side, indicating postural deviation.

Observe the relationship between the plumbline and the landmarks to identify any asymmetries or abnormalities in posture.

STATISTICAL ANALYSIS

The statistical tool used in this analysis is the percentage calculation. This method involves determining the proportion of individuals within a sample population who exhibit a particular characteristic or attribute

RESULT

Graphical Representation of the prevalence of Postural Deviation of batsman and bowler.

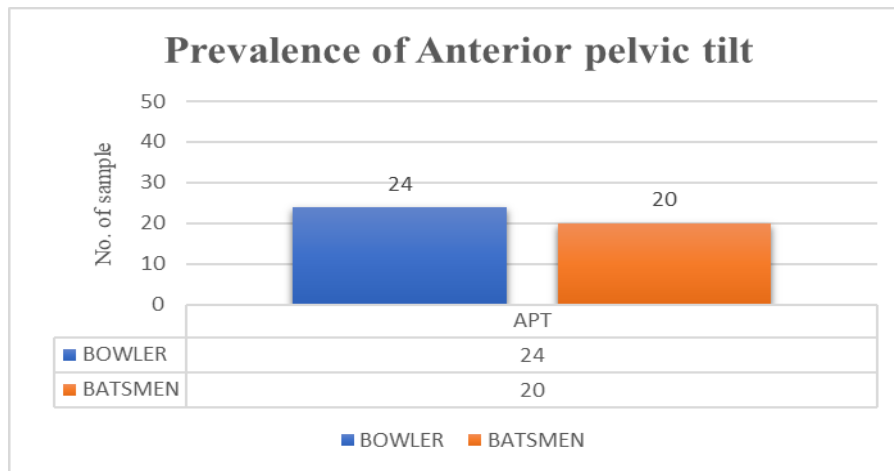


Table 4.2.1 Graphical Representation of comparison of mean score of Anterior pelvic tilt in batsmen and bowler.

Average age of bowler is 19.2 and batsmen is 20.3. According to the data presented in Table 4.1, the prevalence of anterior pelvic tilt among bowlers is recorded at 48%, while among batsmen, it stands at 40%. Specifically, the graph illustrates that out of 50 bowlers surveyed, 24 exhibited anterior

pelvic tilt, whereas among the 50 batsmen surveyed, 20 showed signs of anterior pelvic tilt. This indicates a slightly higher prevalence of anterior pelvic tilt among bowlers compared to batsmen, highlighting a potential difference in postural characteristics between the two-player type.

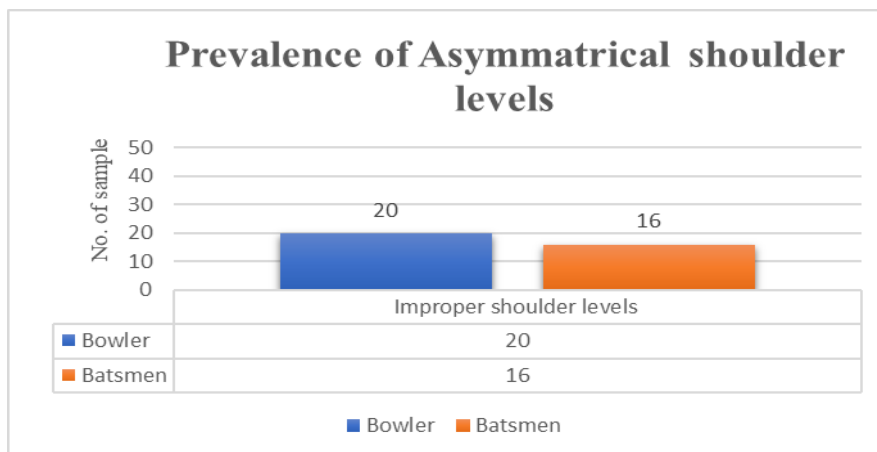


Table 4.2.2 Graphical Representation of comparison of prevalence of Asymmetrical shoulder level in batsmen and bowler.

Based on the data presented in Table 4.2.2, the prevalence of Asymmetrical shoulder level among bowlers is recorded at 40%, whereas among batsmen, it stands at 32%. Specifically, the graph illustrates that out of 50 bowlers surveyed, 20 exhibited Asymmetrical shoulder level, while among

the 50 batsmen surveyed, 16 showed signs of Asymmetrical shoulder level, all the deviation has been seen on the dominant side of the player. This suggests a relatively higher prevalence of Asymmetrical shoulder level among bowlers compared to batsmen.

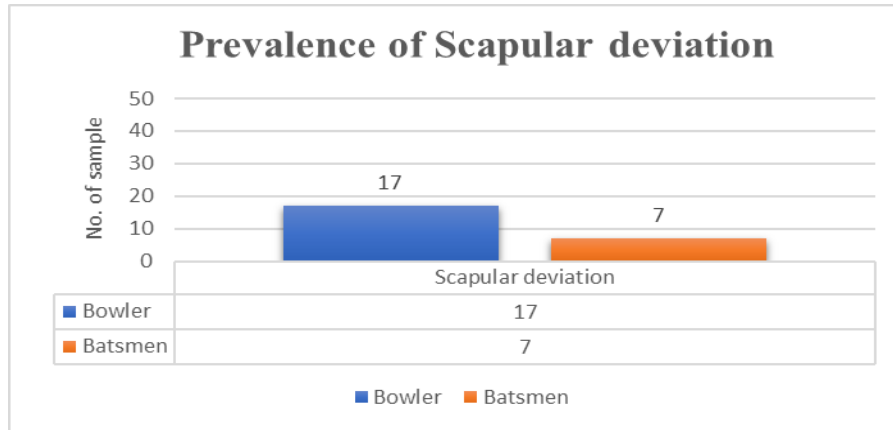


Table 4.2.3 Graphical Representation of comparison of prevalence of Scapular deviation in batsmen and bowler.

Based on the data presented in Table 4.2.3, it is evident that the prevalence of Scapular deviation among bowlers stands at 34%, whereas among batsmen, it is notably lower at 14%. Further analysis from the corresponding graph illustrates that out of 50 bowlers, 17 exhibited Scapular deviation, while among batsmen, the number was comparatively lower, with only 7 out of 50

displaying this postural deviation. This discrepancy underscores potential differences in the manifestation of Scapular deviation between bowlers and batsmen, possibly attributed to the varying biomechanical demands and repetitive motions associated with their respective roles in cricket.

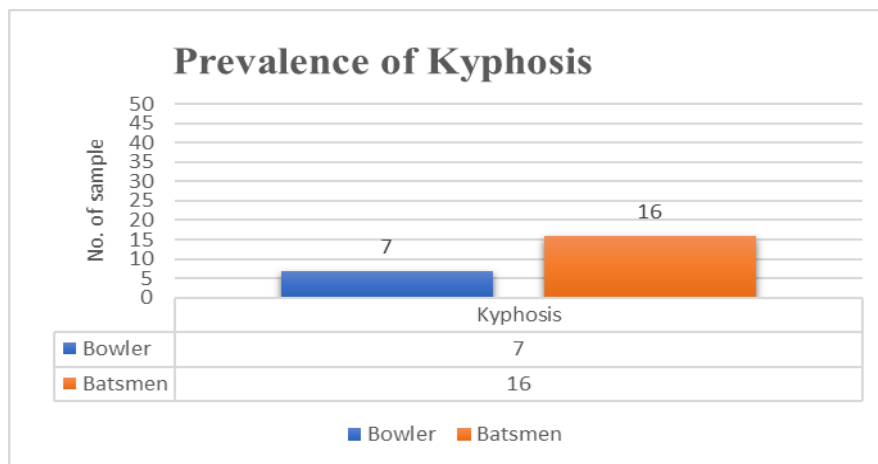


Table 4.2.4 Graphical Representation of comparison of prevalence of Kyphosis in batsmen and bowler.

According to the data presented in Table 4.2.4, the prevalence of kyphosis among bowlers is recorded at 14%, while among batsmen, it stands at 32%. Specifically, the graph illustrates that out of 50 bowlers

surveyed, 7 exhibited kyphosis, whereas among the 50 batsmen surveyed, 16 showed signs of kyphosis. This indicates a higher prevalence of kyphosis among batsmen compared to bowlers.

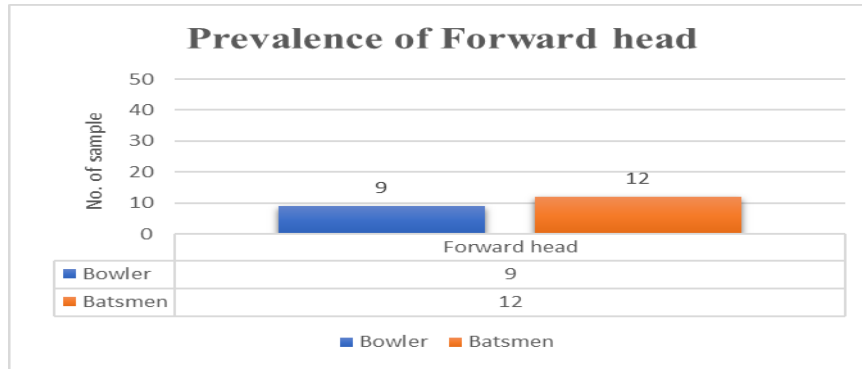


Table 4.2.5 Graphical Representation of comparison of prevalence of Forward head in batsmen and bowler.

Based on the data from Table 4.2.5, the prevalence of forward head posture among bowlers is recorded at 18%, while among batsmen, it stands at 24%. Specifically, the graph indicates that out of 50 bowlers surveyed, 9 exhibited forward head posture,

whereas among the 50 batsmen surveyed, 12 displayed signs of forward head posture. These findings suggest a slightly higher prevalence of forward head posture among batsmen compared to bowlers.

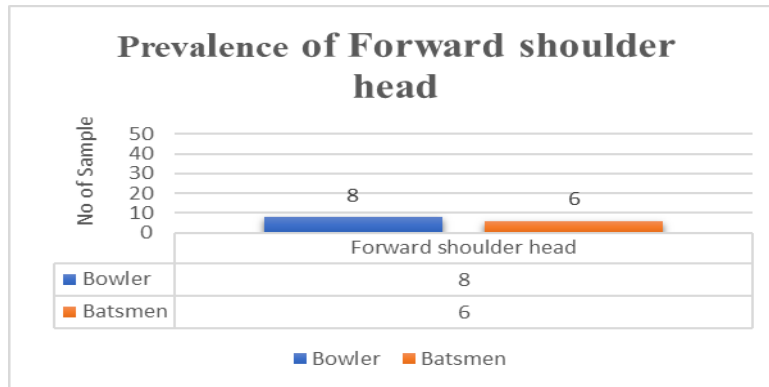


Table 4.2.6 Graphical Representation of comparison of prevalence of Forward shoulder head in batsmen and bowler.

Based on the data presented in Table 4.2.6, the prevalence of forward shoulder head posture among bowlers is recorded at 16%, while among batsmen, it stands at 12%. Specifically, the graph illustrates that out of 50 bowlers surveyed, 8 exhibited forward

shoulder head posture, whereas among the 50 batsmen surveyed, 6 displayed signs of forward shoulder head posture. These findings suggest a slightly higher prevalence of forward shoulder head posture among bowlers compared to batsmen.

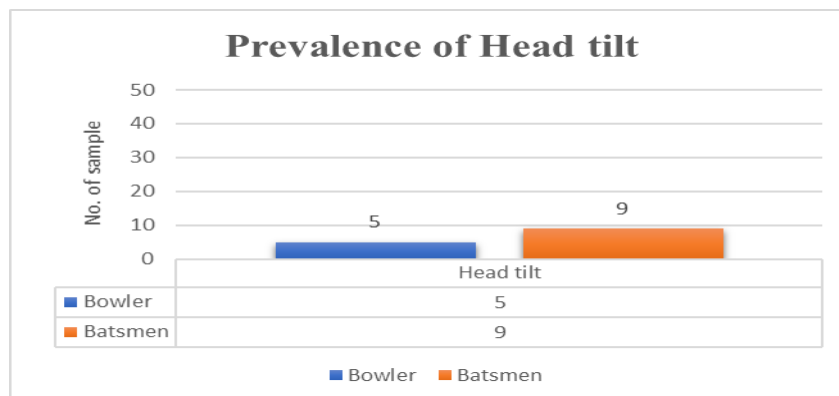


Table 4.2.7 Graphical Representation of comparison of prevalence of Head tilt in batsmen and bowler.

Based on the data presented in Table 4.2.7, the prevalence of head tilt among bowlers is recorded at 10%, while among batsmen, it stands at 18%. Specifically, the graph illustrates that out of 50 bowlers surveyed, 5

exhibited head tilt, whereas among the 50 batsmen surveyed, 9 displayed signs of head tilt. These findings suggest a higher prevalence of head tilt among batsmen compared to bowler

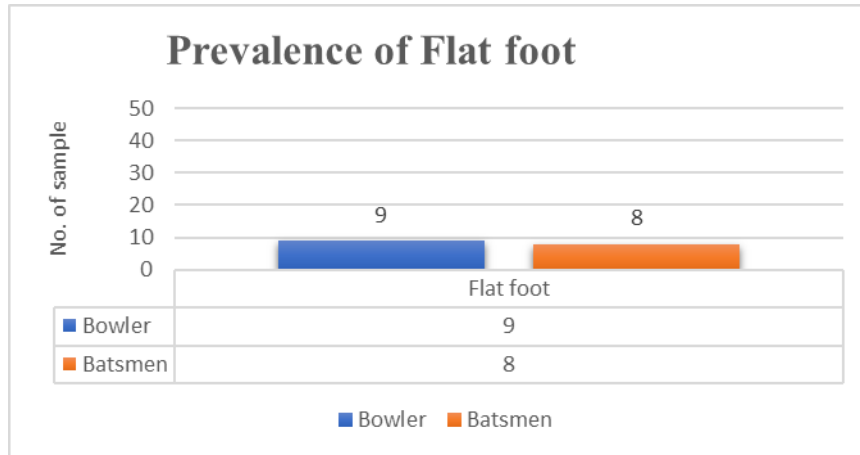


Table 4.2.8 Graphical Representation of comparison of prevalence of Flat foot in batsmen and bowler.

Based on the data presented in Table 4.2.8, the prevalence of flat foot among bowlers is recorded at 18%, while among batsmen, it stands at 16%. Specifically, the graph illustrates that out of 50 bowlers surveyed, 9 exhibited flat foot, whereas among the 50 batsmen surveyed, 8 displayed signs of flat foot. These findings suggest a slightly higher prevalence of flat foot among bowlers compared to batsmen

DISCUSSION

Bowlers exhibited a higher occurrence of anterior pelvic tilt (48%), Asymmetrical shoulder level (40%), and scapular deviation (34%) compared to batsmen suggesting wonderful biomechanical stresses inherent in bowling. Conversely, batsmen displayed a higher occurrence of kyphosis (32%), forward head posture (24%), and ahead shoulder head posture (12%) likely due to the repetitive upper body movements concerned in batting. moreover, batsmen showed a higher incidence of head tilt (18%), even as bowlers established a barely better prevalence of flat foot (18%).

CONCLUSION

In conclusion, the analysis of incorrect postures among cricket players, specifically

bowlers and batsmen has brought out different trends in terms of prevalence and distribution of various deviation. Bowlers had a higher incidence of some deviation such as anterior pelvic tilt, Asymmetrical shoulder level, and scapular deviation whereas for the batters; they experienced more kyphosis, forward head posture as well as forward shoulder head posture. The dissimilarities are possible because the biomechanical demands while bowling differ from those associated with batting. This shows that specific interventions that address individualized postural issues in cricket players are extremely important hence there should be strategies which aim at prevention and enhancing performance via direct focus on particular positions. Further studies are necessary in order to go deeper into these variations to know why they take place as well as to create effective measures to improve postural health among cricketers who have a need for their personal athletic capacities to be optimized.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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