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THE RELATIONSHIP BETWEEN SPORTS PERFORMANCE VARIABLES AND BASEBALL HITTING PERFORMANCE IN DIVISION II ATHLETES

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Hitting performance is an integral part of baseball performance. Ultimately, the better you can develop hitters, the more baseball games you can win. Current literature demonstrates there are ways to improve an athlete's hitting ability through proper preparation in the weightroom, yet more evidence towards which type of training tactics are most effective are limited. **PURPOSE:** The purpose of this quantitative study was to examine the relationship between measures of strength or power and sports specific training tactics to bat velocity and batted ball velocity in NCAA Division II Collegiate baseball players. **METHODS:** Twenty-four Division II baseball athletes from East Stroudsburg University (age: 19.92 ± 1.53 years, height: 71.33 ± 2.91 inches, mass: 186.43 ± 26.01 pounds) participated in the study. Participants were tested on Bat Velocity (BV), Batted Ball Velocity (BBV), Medicine Ball (MB) Rotational Shotput for distance, Lateral Bound for distance, lean body mass, 1RM Trap Bar Deadlift, and 1RM Back Squat. Subjects were assessed in a one-week period, consisting of four testing days. BV, BBV, MB Rotational Shotput, and Lateral Bound were performed on the same day and 1RM Trap Bar Deadlift and Back Squat were integrated into the resistance training program of all twenty-four athletes and completed towards the end of the testing week. **RESULTS:** Lean body mass ($r=0.544$, $p=0.006$) and 1RM Trap Bar Deadlift ($r=0.426$, $p=0.038$) were significant in relation to BBV while MB Rotational Shotput ($r=0.389$, $p=0.060$) showed a trend. In terms of BV, Lean body mass ($r=0.468$, $p=0.021$) had significance again. 1RM Back Squat ($r=0.393$, $p=0.058$) and 1RM Trap Bar Deadlift ($r=0.379$, $p=0.068$) showed a trend with BV. **CONCLUSION:** There is a need for sports performance professionals to understand the importance of lean body mass and Trap Bar Deadlift strength in their baseball athletes. In addition, rotational MB exercises and Back Squat strength are reliable means of training baseball hitters. Incorporating these training measures may translate into an increase in BV and BBV which ultimately creates more offensive success on the field. **SIGNIFICANCE:** As the baseball performance industry progressively moves towards a more data-driven approach, especially with the creation of the MLB Draft Combine, MLB organizations and university's ability to objectively evaluate athletes is essential. In working towards a valid and reliable testing battery as it relates to hitting performance, the baseball industry can make more informed decisions about development, performance, prospect rankings, draft picks, and ultimately on field success.