Baseball Pitcher Arm Flexibility Compared to the Velocity of Pitches Thrown

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Abstract

The purpose of this project was to find out if arm mobility and flexibility has an affect on the velocity of a baseball pitcher's fastball. The plan is to measure the flexibility by having each participant perform a sleeper stretch. Each participant was then classified as flexible or non flexible depending on their results. Then, the velocity of pitches thrown was tested by using a radar gun during a bullpen at the baseball field. The participants took the flexibility test 2 times, a different week each time. Each test was followed by a bullpen for the velocity test. A paired t-test and data plot are used to compare flexibility to velocity. The hypothesis is if the pitcher is more flexible, then the velocity will probably be higher. The group believed that the hypothesis seemed logical, but it could be faulty because of other factors.

Introduction

In today's baseball world, people are getting into a lot of numbers, statistics, and measurements, all to try to gain an advantage over the opponent. And with the technology that is now available there have been many discoveries. The reason in doing this project is seeing if arm flexibility really does have an affect on pitch velocity. If it does have an affect, then that is great and it could possibly help other baseball pitchers. If it does not have an affect, then that is alright too because it would show that it might not matter as much as other factors. Throughout this project, arm flexibility will be measured to an exact degree, and velocity will also be measured to an accurate speed. Hopefully, comparing the measurements in the right way, our results will give an answer to the problem.

Method

Starting with arm flexibility, each pitcher will perform a sleeper stretch. The sleeper stretch is when one lays on their throwing shoulder with their elbow out to the side and even with their shoulder. A sleeper stretch is common among baseball players, especially pitchers; therefore, the participants are already familiar with the stretch. The stretch is measured by using a protractor and the results are in degrees, ranging from 90 degrees to 180 degrees. After getting an accurate measurement, the pitcher is classified as flexible or non-flexible. The next step is to have the pitcher warm up and throw a bullpen. Each pitcher gets three to five warm up pitches. When ready, the pitcher throws three pitches, each one being a fastball; meanwhile, the radar gun is set up to measure the velocity. The results from the radar gun are in miles per hour. Once the pitcher goes through that entire process, the testing for that week is complete. The pitcher will come back the following week for the same process after receiving a minimum of five days rest. All of the results are charted using a data plot.

Reference List

https://kbandstraining.com/baseball-throwing-arm-stretches-flexibility/

Discussion

Since the subjects are all Blue Mountain College baseball players, the results are limited. The four participants went through testing and finished both trials. The testing went smoothy for all participants, and they had no discomforts or injuries during the process. The numbers show a few things. First, the velocity seemed to increase with flexibility for pitchers 1 and 2. But pitcher 3 showed a unique trait by throwing faster than pitchers 1 and 2 while having the least amount of flexibility. Following those results, pitcher 4 comes in with less flexibility than pitcher 2, but higher velocity than all the others. Unfortunately, there does not seem to be much of a correlation between the numbers.

Conclusion

Based on data and research, this study will be a very informative study that raises awareness in mental illness with athltes, particularly baseball players. our research shows how stress is one of the major components of the mentally ill. It also shows how athletes must be have a stable mind when trying to achieve peak performance in their respective sports