Non-Game Injuries in Major League Baseball

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Steve Lemos:
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Esquivel, Curriero, Rand, Conte, Tedeschi:
Nothing to disclose
Introduction

Analysis of “non-game” injuries
– 2011-2016

• Defined as- everything other than in the game (1st pitch to last pitch)
  – Pre-game
  – Post-game
  – Off-season
  – Batting practice
  – Weight room
  – Work out
  – Non-work related
  – other
Methods

Major League Baseball
Health and Injury Tracking System

“HITS”

- Previously no epidemiology for MLB injuries
- Thorough, comprehensive injury surveillance system
- Provides basis for injury prevention, treatment, future research focus
- 2011- data ready for research and analysis
Methods

• Frequency and percentages:
  • non-game versus game related injuries
    • reported and stratified by level of play
      • major or minor
    • total days missed
  • timing both year and month within season
  • position
  • injury activity
  • injury location
  • mechanism of injury
• Chi-square and difference in proportion tests were applied as appropriate to determine significant differences
Results
Non-Game Injuries

Total Injuries = 53,564
- Game- 32,357 = 60%
- Non-game- 21,207 = 40%

MLB vs Minor League
- MLB- 2,903/8,721 = 33%
- Minor League- 18,304/44,843 = 41%

*Significant p<0.001
Results
Non-Game Injuries

Days missed
- Total= 737,529
- Game- 418,549= 57%
- Non-game- 318,980= 43%

- Most common non-game related injury:
  • working out or in weight room (32%)

- Most prevalent activity to cause a non-game injury
  • throwing (27%)
Results - Non-Game Injuries
MLB and Minor Leagues

Starting pitcher:
Most commonly injured position

More ‘non-game’ than
game injuries

<table>
<thead>
<tr>
<th>Position</th>
<th>Number of Injuries</th>
<th>37%</th>
<th>31%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starter</td>
<td>6000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliever</td>
<td>7000</td>
<td></td>
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<tr>
<td>Catcher</td>
<td>4000</td>
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<tr>
<td>Infielder</td>
<td>14,000</td>
<td></td>
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<tr>
<td>Outfielder</td>
<td>6000</td>
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<tr>
<td>DH</td>
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</tr>
</tbody>
</table>

Starting pitcher: More ‘non-game’ than game injuries
Results- Non-Game Injuries
Major Leagues

In major leagues: no position had more ‘non-game’ than game injuries
Results - Non-Game Injuries
Minor Leagues

In minor leagues: both starting and relief pitchers had more ‘non-game’ than game injuries.
Results - Non-game Injuries

• **Spring Training**
  - Total 5,314/8,474 = 63%

• **In-Season**
  - Total 13,065/41,133 = 32%
    - April 2,502/6,851 = 37%
    - May 2,636/7,900 = 33%
    - June 2,192/7,200 = 30%
    - July 2,373/8,359 = 28%
    - August 2,189/7,986 = 27%
    - September 1,173/2,837 = 41%

  - Spring Training
    Injuries per day = 20
  - Season
    Injuries per day = 12
• The “non-game” injury data obtained determined:
  – prevalence, type, and cause of injuries
• Further work is needed to refine the variables
  – more accurately define the exact activity of non-game injury
  – will allow coaches, athletic trainers, strength and conditioning coaches, and clinicians to modify and alleviate the activities which could be increasing the likelihood of these injuries
Thank You