Psychosocial Outcomes of Sport Concussion in Elite Youth Hockey Players and their Parents

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Outline

Background

Purpose

Methodology

Results

Conclusion/Implications

Questions
Impact of a Concussion
Impact of a Concussion
What is a Concussion?

MTBI

Symptoms:
- Headache
- Difficulty Balancing
- Nausea
- Dizziness
- Feeling in a Fog
- Difficulty Concentrating

Psychosocial Symptoms:
- Anxiety
- Somatization
- Depressed Mood
- Turbulent Relationships
Supporting Evidence
Proportion of youth hockey players who indicated symptoms on ImPACT

* No difference found in neurocognitive ImPACT scores
Guskiewicz et al., 2007

Percentage of Retired Players with Diagnosed Depression

<table>
<thead>
<tr>
<th>Concussion History</th>
<th>% of Retired Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6.59%</td>
</tr>
<tr>
<td>1 or 2</td>
<td>9.74%</td>
</tr>
<tr>
<td>3 +</td>
<td>20.17%</td>
</tr>
</tbody>
</table>

*p < 0.005*
Retired players and their Spouse/Relative reporting “a lot of the time or always” sad, nervous, or under a lot of stress

Guskiewicz et al., 2007

% of Retired Players/Spouse

Concussion History

- 0: 7.42%
- 1 or 2: 9.24%
- 3+: 17.83%

- Retiree
- Spouse/Relative
Do elite youth hockey players with a history of concussion report psychosocial symptoms?

Do the players view their symptoms similar to how their parents view them?
To better understand psychosocial outcomes of concussion in youth
To better understand psychosocial outcomes of concussion in youth

Why

94,000 sports related concussions occurring annually in Canada

(Statistics Canada 2009-10)

high impact sport, injury is inevitable

Winnipeg Free Press
To better understand psychosocial outcomes of concussion in youth

Data collected in 2011-12 PRE season

531 male elite Bantam and Midget hockey players (average age 15) and their parents from Edmonton & Calgary

BASC2 & Pre-season Medical Questionnaire (retrospective report of concussion)
# Pre-season Medical Questionnaire

## Injury History

1. Have you ever had a concussion or been "knocked out" or had your "bell rung"?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

If "Yes", please list below:

<table>
<thead>
<tr>
<th>Date: eg. (DD/MM/YY)</th>
<th>Activity at the time</th>
<th>Time unconscious</th>
<th>Memory loss (yes or no)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hockey, skateboarding, etc.</td>
<td>0 min</td>
<td>30 sec</td>
</tr>
</tbody>
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**Behavioral Assessment System for Children**

**BASC2 & Pre-season Medical Questionnaire**

(retrospective report of concussion)
Based on reported history of concussion...

Group 1:  
N=342

Group 2:  
N=115

Group 3:  
N=74
BASC2 Ratings: Athletes

Anxiety

Mean Scores: BASC2

* p=0.047

* p=0.029

BASC2 Clinical Scales

0 Concussions
1 Concussion
2+ Concussion
BASC2 Ratings: Athletes and Parents who Experienced Two or More Concussions

Why?
Two Snap Shots in Time

Bantam/Midget Elite players Age 15

Professionals

?
Implications

- Education
- Diagnosis & Treatment
- Multidisciplinary Approach
- Future Research
Concussion Awareness Training Tool
Dr. Shelina Babul

Cattonline.com provides up-to-date concussion education for parents and coaches. It includes video lessons and resources to effectively prevent, recognize and manage a players recovery.

BEGIN COURSE

Parents
Information and resources for parents to help manage a child with a concussion

Players
Helpful videos to teach players about concussions

Coaches
Information and tools to help coaches manage a player with a concussion
Implications

Education

Diagnosis & Treatment

Multidisciplinary Approach

Future Research
Important to:
- Have a support system
- Mitigate anxiety and depression
- Create a goal oriented recovery plan
- Positive attitude
Implications

- Education
- Diagnosis & Treatment
- Multidisciplinary Approach
- Future Research
Multidisciplinary Approach
Implications

- Education
- Diagnosis & Treatment
- Multidisciplinary Approach
- Future Research
Predictive Factors

Two Snap Shots in Time

Genetics

Severity of concussion

Bantam/Midget Elite players Age 15

Multiple concussions

Professionals

Future Research
1. Increase in number of concussions may lead to an increase the risk of psychosocial outcomes.

2. Young athletes with a history of multiple concussions may be prone to experiencing subtle psychosocial outcomes (depression, anxiety & somatization).

3. Psychosocial outcomes players experience may not be easily recognized by parents.
*Take home message*

Why are psychosocial outcomes important to consider?

1. Can impede recovery (RTL & RTP) & treatment

2. Effect relationships (family & Friends)

3. Long term consequences

Knowledge translation is key!
Thank you

Can I answer any questions?