An Systems Approach to Understanding How Sport-Related Concussion is Prevented in Community Rugby Union

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Concussion in Rugby Union

• “the rapid onset of cognitive disruption following a forceful acceleration and/or deceleration of the brain” (McCrory et al., 2013).

• Current strategies
  • Protective gear (e.g., headgear, mouthguards)
  • Rule adaptations (e.g., tackling laws, scrum and lineout engagement)
  • Sport-specific management advice
The Rugby Union System
Adapting Rassmussen’s Risk Management Framework
Are the prevention strategies currently held and practiced by actors within each level of the community rugby union system complementary or divergent?

PREVENTING CONCUSSION IN RUGBY

Role

Responsibilities

Strategies
The Play: Research Design

• Participants
  • Past and present participants of rugby union from each of the system levels
  • Single and multiple roles
  • 14yrs+

• Questionnaire
  • SurveyMonkey
  • Demographic questions (e.g., age, gender, duration of participation)
  • Open-ended role-specific questions
    • “In your role, how would you/do you prevent a concussion?”
    • “What are your responsibilities in preventing a concussion?”
The Play:
Research Design

• Method
  • Invitations to participate were distributed online. Attempts were made to reach as many levels of the system as possible
  • Data was collected during the 2014 rugby season (October – November) using SurveyMonkey

• Analyses
  • Responses were extracted into NVivo
  • Thematically coded (adapted from Braun & Clarke, 2006)
  • Transposed into frequency matrices to analyse and identify gaps/overlaps in between- and within- level responses
## The Rugby Union System

### Governing Bodies

### Regulatory Bodies and Groups

### Club Level

<table>
<thead>
<tr>
<th>Role</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Club Management</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Administration</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Referees</td>
<td>15%</td>
<td>16%</td>
</tr>
</tbody>
</table>

### Immediate Supervisory Group

<table>
<thead>
<tr>
<th>Role</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coaches</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Medics</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Volunteers</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>

### The Game and Training

<table>
<thead>
<tr>
<th>Role</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Players</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>Coaches</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Volunteers</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Referees</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Medics</td>
<td>15%</td>
<td></td>
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</tbody>
</table>

### Equipment and Environment

<table>
<thead>
<tr>
<th>Role</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer</td>
<td>107</td>
<td>69.2%</td>
</tr>
</tbody>
</table>

*N = 107; 69.2%♂*
The Try: Research Findings

• 57% of the key stakeholders in community rugby union saw they had some responsibility in preventing concussion

• Strong similarities in the coach and player perspectives of their roles in preventing rugby-related concussion
  • E.g., proper training, technique correction, and education
  • May be due to role multiplicity

• Medics and referees presented the most consistent responses within their roles
  • Respectively, safe environment and enforcing concussion management protocol
The Try: Research Findings

• Targeted training (i.e., correct tackling technique, avoiding head contact) was the most frequent prevention strategy presented by actors from every level of the system.

• Use of headgear was reported by 36% of parents and 40% of players.
  • Members from within each level of the system expressed that this was not an effective strategy.

• Concussion as inevitable
  • acceptance of the physical nature of contact football?
  • lack of confidence in the efficacy of the current concussion management guidelines?
Making the Conversion: Applications of the Research

• Theory of reasoned action
  • Attitude = behaviour
• Effective dissemination
  • Multiple roles
• Consideration for the infrastructural limitations in community sporting clubs