Overview

1. Injury in early childhood
2. Developmental considerations
3. Psychological consequences
4. Course
5. Case studies
6. Risk factors
7. Clinical implications

Injury During Early Childhood

- Injury is a leading cause of death, hospitalisation & disability
- Children < 5 years are the highest risk population
- Many potentially traumatic events associated with injury
- However, psychological distress is often under recognised and undertreated.

Developmental Considerations

- Developmental capacities
- Neurobiological vulnerability
- Typical fears: separation, injury, darkness, strangers, loud noises
- Magical thinking - may make false assumptions or draw wrong conclusions about causes of injury or treatment
- Tend to generalise or catastrophise facts
- Young children may not understand the reason for their parents distress
- Require routine, consistency & predictability
Parent-Child Relationship
- Trauma must be considered within the context of parent-child relationship
- Secure attachment is key for healthy development
- Injury can shatter a child’s view of their parent as a ‘protective shield’
- ‘Relational PTSD’

Posttraumatic Stress Disorder (PTSD)
- PTSD is common following trauma
- Difficult to diagnose PTSD in young children
- PTSD symptoms can manifest differently in young children
- Concerns raised about diagnostic validity of DSM-4 PTSD criteria
- Research now supporting an alternative algorithm for preschool children (De Young et al., 2011; Scheeringa et al., 2003)

PTSD Prevalence Rates
- Burn Injury:
  - 0-4 weeks: 29% (Stoddard et al., 2006)
  - 4-6 weeks: 25% (De Young et al., 2011)
  - 6 months: 10% (De Young et al., 2011)
  - 15 months: 13.2% (Graf et al., 2011)
- Motor Vehicle Accident:
  - 2-4 weeks: 6.5% (Meiser-Stedman et al., 2008)
  - 6 months: 10% (Meiser-Stedman et al., 2008)
- Mixed injury:
  - 2 months: 14.3% (Scheeringa et al., 2006)

PTSD Criteria

<table>
<thead>
<tr>
<th>DSM-IV</th>
<th>DSM-5 – Preschool Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Experience of a traumatic event</td>
<td>A - Experience of a traumatic event</td>
</tr>
<tr>
<td>1. Objective (threat to self or others)</td>
<td>2. No longer require A2</td>
</tr>
<tr>
<td>2. Subjective (fear, helpless, horror)</td>
<td></td>
</tr>
<tr>
<td>B - Re-experiencing the trauma</td>
<td>B - Re-experiencing the trauma</td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>C - Avoidance and numbing</td>
<td>C - Persistent avoidance</td>
</tr>
<tr>
<td>1.</td>
<td>c from C or D</td>
</tr>
<tr>
<td>D - Persistent hyperarousal</td>
<td>D - Negative alterations in cognitions &amp; mood</td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>E - Duration &gt; 4 weeks</td>
<td>E - Alterations in arousal</td>
</tr>
<tr>
<td>1.</td>
<td>2</td>
</tr>
<tr>
<td>F - Impairment or distress</td>
<td>F - Duration &gt; 4 weeks</td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>G - Impairment or distress</td>
<td></td>
</tr>
</tbody>
</table>

http://www.dsm5.org/Pages/Default.aspx

Prevalence of Other Disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>1 Month</th>
<th>6 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>ADHD</td>
<td>7 (5)</td>
<td>8 (6)</td>
</tr>
<tr>
<td>Oppositional Defiance</td>
<td>21 (16)</td>
<td>17 (14)</td>
</tr>
<tr>
<td>Separation Anxiety</td>
<td>21 (16)</td>
<td>10 (8)</td>
</tr>
<tr>
<td>Specific Phobia</td>
<td>6 (5)</td>
<td>12 (10)</td>
</tr>
<tr>
<td>Any disorder</td>
<td>45 (35)</td>
<td>34 (27)</td>
</tr>
</tbody>
</table>

Comorbidity with PTSD

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>6 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>ADHD</td>
<td>4 (12)*</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Oppositional Defiance</td>
<td>16 (49)*</td>
<td>10 (27)*</td>
</tr>
<tr>
<td>Separation Anxiety</td>
<td>16 (49)*</td>
<td>5 (39)*</td>
</tr>
<tr>
<td>Specific Phobia</td>
<td>5 (15)*</td>
<td>2 (15)</td>
</tr>
<tr>
<td>Any disorder</td>
<td>24 (73)</td>
<td>11 (85)</td>
</tr>
</tbody>
</table>

NOTE: * p < .01.


Child Recovery Trajectories

- "Resilient" – experience transient, brief, and mild disruption in functioning (~37%)
- "Recovered" – experience elevated distress with significant disruption to daily functioning but resolve to baseline after some months (~33%)
- "Chronic" – high levels of acute and ongoing symptoms (~10%)

Course of PTSS in Preschoolers

<table>
<thead>
<tr>
<th>Measure</th>
<th>0-2 wks</th>
<th>1 mth</th>
<th>6 mths</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>25 (22%)</td>
<td>15 (14%)</td>
<td>8 (7%)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>22 (20%)</td>
<td>13 (12%)</td>
<td>9 (8%)</td>
</tr>
<tr>
<td>Stress</td>
<td>27 (25%)</td>
<td>17 (15%)</td>
<td>9 (8%)</td>
</tr>
<tr>
<td>PDS</td>
<td>-</td>
<td>25 (22%)</td>
<td>6 (5%)</td>
</tr>
</tbody>
</table>

Why are these findings of concern?

- Psychological stress is associated with:
  - Adverse health outcomes (Kushner-Berman & Seng, 2005)
  - Poorer treatment adherence (Shemesh et al., 2000)
  - Longer treatment times
  - Increased pain
  - Impaired wound healing (Walburn et al., 2009)
  - Worse functional outcomes (Zatzick et al., 2008)

Case Study 1: “Sarah”

Background:
- 2.5-year-old girl
- Lives with biological parents & 4-year-old sister
- Both parents have TAFE/college certificate

Injury:
- 16% TBSA flame burn to face, arms & legs from gas bottle explosion
- Transported to RCH by ambulance
- Required 6 theatre visits, 1 skin graft

Presenting problems:

<table>
<thead>
<tr>
<th>Time</th>
<th>Sarah</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-2 weeks</td>
<td>CBCL normal</td>
<td>Mild depression</td>
</tr>
<tr>
<td>1 month</td>
<td>PDS</td>
<td>PTSD - moderate</td>
</tr>
<tr>
<td>6 months</td>
<td>Mild PTSD</td>
<td>Mild PTSD</td>
</tr>
</tbody>
</table>
Case Study 2: “Kate”

Background:
- 2.5-year-old girl
- Lives with mother, mothers boyfriend & 2 siblings (12 & 9 yrs)
- Mother & boyfriend left school in year 10 and unemployed

Injury:
- 8% TBSA scald burn to face, chest & arm from cup of noodles
- Transported to Caloundra Hospital by ambulance
- Healed w/in 2 weeks

Presenting problems:
- CBCL Ext - clinical
- Mild anxiety
- PTSD – mod-severe
- Ex. severe anxiety, severe stress, mild depression

Risk Factors for Child PTSS

Pre-Trauma
- Pre-existing psychopathology
- Poor attachment
- Preschool age

Trauma-Related
- Proximity to event
- Witness threat to parent
- Pain
- Heart rate
- Injury severity

Post-Trauma
- Low maternal sensitivity
- Parent distress

Model of Risk Factors for Child & Parent Distress

Key points
- Parent distress is particularly influential for the development & maintenance of child PTSS over time
- Support was not found for ‘relational PTSD’ model
- Possible explanations as to why parent distress—child distress:
  - Parent becomes withdrawn or emotionally unavailable
  - Child models parent’s fear responses
  - Parent influences exposure to traumatic reminders
  - Changes in parenting style (e.g. over-protective)
  - Genetic vulnerability
Case Study: Risk Factors

Case 1:
- Family distress (mum, dad & grandfather)
- %TBSA
- Invasive procedures

Case 2:
- Family situation: low SES, parental separation, mother remarrying
- Parent prior trauma history
- Child pre-existing behavioural problems
- Parent distress
- Parent-child relationship difficulties

Summary so far...
- Young children do experience persistent traumatic stress reactions
- Parents also experience psychological distress
- Child risk factors include:
  - Older age
  - %TBSA
  - Acute distress
  - Parental distress
- Parent risk factors include:
  - Prior trauma history
  - Invasive procedures
  - Acute distress levels
  - Guilt
- Untreated trauma reactions are likely to have significant long term implications

Clinical Implications

Model of Care

Pediatric Medical Traumatic Stress (PMTS)
"a set of psychological and physiological responses of children and their families to pain, injury, medical procedures, and invasive or frightening treatment experiences"

Stepped-Care Preventative Health Model

Universal: Minimise PTE’s
- Educate staff on how to provide trauma informed care
  - www.HealthCareToolbox.org
- Prepare children & parents in advance for medical procedures
  - "Bobby got a burn" (Miller et al., 2010)
    - ADVANCE (Kain et al., 2001)
      - Anxiety reduction, Distraction, Video modelling, Adding parents, No excessive reassurance, Coaching & Exposure.
- Effective pain management
  - Multi-modal distraction device (Miller et al., 2010)
Universal: Screening

Children
- Young Child PTSD Screen (YCPS; Scheeringa, 2010)
  - 6 PTSD parent-report items
  - Administer 2-4 weeks after event
  - Has not been empirically validated
  - Available for free at: http://www.infantinstitute.org/measures.htm

Parents
- Trauma Screening Questionnaire (TSQ; Brewin et al., 2002)
  - 10-item self-report screen for PTSD symptoms
  - Administer 3-4 weeks after event

Universal: Information Provision

Targeted: Early Intervention
- No research with young injured children
- Current ideas/recommendations:
  - Identify children at high-risk
  - Psychoeducation on medical traumatic stress
  - Provision of helpful coping strategies
  - Age-appropriate construction of trauma narrative
  - Provision of brochure or website

Indicated: Treatment
- Trauma-Focused CBT (TF-CBT)
  - 12-session manualised treatment program for PTSD conducted with children (3-6 years) (Scheeringa et al., 2011)
  - Early evidence that feasible and effective for majority of preschoolers
- Attachment interventions
  - Circle of Security
  - Parent-Child Interaction Therapy
  - Child Parent Psychotherapy

Case Studies: Why the different outcomes?
- Case 2 had more pre-existing & post-trauma risk factors
- Different levels of support provided
  - Case 1: identified as at-risk by hospital staff, mother recognised problems, SW & CL provided ongoing support (e.g. strategies to manage child anxiety during medical procedures, nightmares & separation anxiety; grief & loss counselling; trauma counselling)
  - Case 2: outpatients, no follow-up contact, mum did not recognise as a problem that needed treatment
Conclusions

- Injury & associated medical treatment can be a scary & overwhelming experience for young children & families.
- 10% at risk of a chronic & unremitting PTSD & co-morbid conditions
- Parent distress is a significant risk factor for persistent child distress
- Trauma-informed care should involve a stepped care approach
  - Minimise experience of potentially traumatic events
  - Screen & monitor distress - 'watchful waiting'
  - Prevent traumatic stress responses - information provision
  - Treat severe & persistent distress
- There is still much work to be done with young children

What do we hope to achieve?

- Advance evidence base for a model of clinical care for young injured children. What planning to do:
  - Develop:
    - Staff training resource
    - Screening tool to identify 'at-risk' children
    - Information resources
    - Preventative/early intervention strategies
  - Research:
    - Investigate stepped screening and early intervention approach
    - Test model of health practice change
- Translate research into practice!!

Recommended Resources

- Health-care providers
  - Assessment & treatment resources: [http://www.infantinstitute.org/measures.htm](http://www.infantinstitute.org/measures.htm)
  - TF-CBT web-based training: [http://tfcbt.musc.edu/](http://tfcbt.musc.edu/)
  - Trauma Recovery blog: [www.trauma-recovery.net](http://www.trauma-recovery.net)
- Parents
  - After the Injury: [www.aftertheinjury.org](http://www.aftertheinjury.org)

Questions?

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