Protecting the Mental Health of Children and Families in Post-Disaster Communities

Kathleen Liberty, John Bangma & Maureen Allan
Canterbury Earthquakes Symposium
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The problem is solved by continuing to find solutions

I ōrea te tuātara ka patu ki waho
Evidence from the Christchurch Children Earthquake Studies

• Two descriptive longitudinal studies to examine effects of earthquakes on children

• A novel school-based intervention study, with replication
Research from Major Natural Disasters Help Us Understand Disaster Effects on Children

<table>
<thead>
<tr>
<th>Disaster</th>
<th>Population</th>
<th>Injuries</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurricane Katrina</td>
<td>5.8 million</td>
<td>5698</td>
<td>1836</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.8 per 10,000</td>
<td>3.1 per 10,000</td>
</tr>
<tr>
<td>Tōhoku Japan Earthquake &amp; Tsunami</td>
<td>1,585,900</td>
<td>27,074</td>
<td>18,500-20,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>170.7 per 10,000</td>
<td>126.1 per 10,000</td>
</tr>
<tr>
<td>Canterbury Earthquake (22.2.10)</td>
<td>440,000</td>
<td>6,600</td>
<td>185</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 per 10,000</td>
<td>4.2 per 10,000</td>
</tr>
</tbody>
</table>
# Rates of Post-Earthquake PTSD in Children

<table>
<thead>
<tr>
<th>Earthquake Location</th>
<th>Magnitude of Earthquake</th>
<th>Percent of Children with Post-Traumatic Stress Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christchurch NZ</td>
<td>6.3</td>
<td>20.9%</td>
</tr>
<tr>
<td>L’Aquilla Italy</td>
<td>5.7</td>
<td>22.9%</td>
</tr>
<tr>
<td>Marama Turkey</td>
<td>7.4</td>
<td>28.0%</td>
</tr>
<tr>
<td>Great Japan EQ &amp; Tsunami</td>
<td>9.0</td>
<td>42.6%</td>
</tr>
<tr>
<td>Armenia</td>
<td>6.9</td>
<td>54.2%</td>
</tr>
</tbody>
</table>

Amygdala and Orbitalfrontal Cortex

The role of parenting behaviors in childhood post-traumatic stress disorder: A meta-analytic review

- Significant associations were found between parenting behaviors and childhood PTSD.
- Parenting behavior accounted for 2.0–5.3% of the variance in child PTSD.
- Both negative and positive parenting were significantly associated with child PTSD.
- Positive and negative parenting effects did not differ statistically in magnitude.
Overseas research suggested PTS in children would improve over 2-3 years post-disaster.

In one study, 3 Years After 2 Hurricanes & an Oil Spill Disaster, 70% of children were improving.

But . . . this didn’t happen in Christchurch.
Evidence that problems continued in many study children 2-3 years after the children entered school.

Strategies Overview

Year 1 (2016) 18 Strategies

- Principal and Teacher wellbeing
- Education about child stress reactivity
- Emotion coaching
- Improve physical health of children with stress symptoms
- Restructure school day
- Calm down classroom environments

Year 2 (2017)

- Reach In Reach Out Resilience Programme

Year 3 (2018)

- Teach Positive Coping Skills
Strategy Examples

**Emotion Coaching**

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Location</th>
<th>Activity</th>
<th>P E L</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-8:55</td>
<td>Before School</td>
<td>Home</td>
<td>Play, Eat</td>
</tr>
<tr>
<td></td>
<td>Routine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.55-9:20</td>
<td>School begins</td>
<td>Karakia, Hui</td>
<td>Learn</td>
</tr>
<tr>
<td>9.20-9.30</td>
<td>In class</td>
<td>Morning snack (Milk and complex carbs)</td>
<td>Eat</td>
</tr>
<tr>
<td>9.30-11:00</td>
<td>In class</td>
<td>Reading and Writing</td>
<td>Learn</td>
</tr>
<tr>
<td>11am-11.15</td>
<td>Outside</td>
<td>Morning play time</td>
<td>Play</td>
</tr>
<tr>
<td>11.15-11.25</td>
<td>In class</td>
<td>Morning tea *Child’s own food</td>
<td>Eat</td>
</tr>
<tr>
<td>11.25-12.45</td>
<td>In class</td>
<td>Maths</td>
<td>Learn</td>
</tr>
<tr>
<td>12.45-1.15</td>
<td>Outside</td>
<td>Lunch play time</td>
<td>Play</td>
</tr>
<tr>
<td>1.15-1.30</td>
<td>In class</td>
<td>Lunch *Child’s own food</td>
<td>Eat</td>
</tr>
<tr>
<td>1.30-2.45</td>
<td>In class</td>
<td>Maths/Topic/Art etc.</td>
<td>Learn</td>
</tr>
</tbody>
</table>

*For more information on strategies, Google & download: Liberty (2017) "Reducing Stress in Schools"

Drink to Think & Think to Drink
Replication Study at 3 Time Points (to date)

Only A Few Strategies Used, Problems Increased

60%+ Strategies Used, Problems Decreased
What’s next?

Neighbourhood Trust on You Tube!
Positive Coping

Yes, I Can!
Be Kind

Kindness Education
Positive Psychology Session Plan

Bona Liberry

Yes, I can!

SLEEP INQUIRY BOOK
Part one

Yes, I can!

I AM A SLEEP SCIENTIST
Strategy Effects on Creativity

Percent rated high or very high compared to peers

- Pilot Schools
- Replication Study

Before Strategies
Strategies

Percent rated high or very high compared to peers
Attendance and Creativity

- Before Strategies: 15%
- During Strategies: 5%

- Percent Low or Very Low
- Percent High or Very High
What does the future hold for our children and grandchildren
And their children yet to be?