Is Seeing Really Believing?

The impact of different trauma experiences on the development of new mental health issues in a sample of adults with anxiety disorders.

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• Anxiety Disorders Service (ADS) is community based treatment team.
• Clinicians (social workers, nurses, occupational therapists, psychologists) specialise in treatment of adults (18-65) with severe anxiety disorders.
• Referrals received from mental health services or GPs.
• Individual or group therapy: predominantly CBT based, practitioners also use other evidence based interventions including meta-cognitive therapy and EMDR.
• Adult Specialist Services Earthquake Team (ASSET) set up in 2012 to treat earthquake-specific PTSD.
The nature of trauma…in nature.

• Natural and person-influenced disasters occur regularly on an international scale; floods, earthquakes, volcanic eruptions, fires, warfare, terrorism.

• Populations exposed to these natural disasters are vulnerable to a number of stressors:
  • Job loss, damage to homes, death of loved ones, personal injury, ongoing difficulties in rebuilding.

• Risk factors for developing mental health issues such as depression, substance abuse disorders and post-traumatic stress disorder (PTSD) have been investigated thoroughly in the literature.
  • Cognitive and biological vulnerabilities
  • Dose effect of trauma
  • Peritraumatic distress
  • Lack of social support

Existing mental health and trauma

- In a population of treatment-seeking adults following the 1999 Turkish earthquake, past psychiatric illness were predicting factor for developing depression but not PTSD \cite{Livanou,Basoglu,Saltioglu,Kalender,2002}.

- Prior psychiatric problems and poor psychosocial resources predicted adverse outcomes following a disaster \cite{Norris,Friedman,Watson,Bryne,Diaz,Kaniasty,2002}.

- Survey of psychiatric outpatients following 2011 Japan earthquake and subsequent nuclear disaster \cite{Matsumoto,Kunii,et,al,2014}.
  - Found little change in principal disorder of patients (did not assess new mental health issues).
  - Bipolar I disorder most likely to be exacerbated - manic “switches”.

- Anxiety sensitivity predicts various psychopathology presentations in adolescents following 2011 Van earthquake. \cite{Kadak,Nasiroglu,Boysan,2013}. 
Traumatic Exposure Severity Scale (TESS)

- Developed after 1999 Marmara Turkish earthquake to measure the degree of exposure to an earthquake disaster.
  - Incorporate range of stressor exposure and perceived distress associated with aspects of trauma experienced.
- Initial population of 446 individuals participated in scale development.
- 24 item, self-administered questionnaire.
- Occurrence Scale and Distress Scale.
- Factor analysis indicated five subscales:
  - Resource Loss/Being in Need
  - Personal Harm
  - Concern for Significant Other
  - Exposure to the Grotesque
  - Damage to Home and Goods

Elal & Slade (2005)
Research questions

• Is a pre-existing anxiety disorder a risk factor for developing new psychopathology after a series of earthquakes?

• Are there differences in the nature of trauma exposure that predict new psychopathology in a population of earthquake exposed individuals with a pre-existing anxiety disorder?

• Does the Trauma Exposure Severity Scale (TESS) capture differences in a population of earthquake exposed individuals with a pre-existing anxiety disorder?
Method

- Participants were recruited from existing clients at the Anxiety Disorders Service.
- Clients were asked to participate if they had:
  a) Been accepted to ADS after assessment or
  b) Were on a clinicians existing caseload
- Recruitment occurred between August 2012 and July 2013.
- Once they had consented to participate, they were asked to attend an existing appointment 30 minutes early to complete the battery of questionnaires.
- Measures:
  - Peri-traumatic Distress Inventory, Alcohol Use Disorders Identification Test, Traumatic Exposure Severity Scale, PTSD Checklist, Depression Anxiety and Stress Scale- 21, Work and Social Adjustment Scale, Connor-Davidson Resilience Scale.
Population

- N= 53 participants total.
- 83% New Zealand European, 10% New Zealand Māori.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>46%</td>
</tr>
<tr>
<td>Female</td>
<td>54%</td>
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<table>
<thead>
<tr>
<th>Age</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
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<tbody>
<tr>
<td></td>
<td>32.8</td>
<td>10.9</td>
<td>18-57 years</td>
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# Results - New Mental Health issues and Occurrences.

<table>
<thead>
<tr>
<th></th>
<th>Group 1- no new mental health issues</th>
<th>Group 2- new mental health issues</th>
<th>Cohen’s effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESS Occurrence Total**</td>
<td>M= 3.5, SD= 2.5</td>
<td>M= 7.6, SD= 3.15</td>
<td>d= -1.58</td>
</tr>
<tr>
<td>TESS- Resource Loss Occurrence**</td>
<td>M= 1.26, SD= 1.4</td>
<td>M= 3.29, SD= 32.29</td>
<td>d= -1.32</td>
</tr>
<tr>
<td>TESS- Greater damage to homes Occurrences**</td>
<td>M= 1.21, SD= 0.83</td>
<td>M= 2.14, SD= 0.38</td>
<td>d= -1.18</td>
</tr>
<tr>
<td>TESS- Concern for loved ones Occurrences*</td>
<td>M= 0.79, SD= 0.6</td>
<td>M= 1.57, SD= 0.98</td>
<td>d= -1.18</td>
</tr>
</tbody>
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* = significant at p<0.05  **= significant at p<0.001
### Results - New Mental Health issues and Distress.

<table>
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<th>Group 2 - new mental health issues</th>
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<tr>
<td>TESS Distress Total**</td>
<td>M = 10.42, SD = 8.53</td>
<td>M = 31.71, SD = 16.59</td>
<td>d = -2.51</td>
</tr>
<tr>
<td>TESS- Resource Loss Distress**</td>
<td>M = 3.79, SD = 4.82</td>
<td>M = 14.29, SD = 11.32</td>
<td>d = -1.74</td>
</tr>
<tr>
<td>TESS- Greater damage to homes Distress**</td>
<td>M = 2.98, SD = 2.65</td>
<td>M = 7.57, SD = 3.99</td>
<td>d = -1.61</td>
</tr>
<tr>
<td>TESS- Concern for loved ones Distress**</td>
<td>M = 3.05, SD = 2.35</td>
<td>M = 7.14, SD = 4.18</td>
<td>d = -1.54</td>
</tr>
</tbody>
</table>

**= significant at p<0.001
What TESS subscales predict current PTSD symptoms?

- Multiple regressions were conducted on the TESS occurrences and distress subscales using participants scores on the PTSD Checklist (PCL-S).
- The model using the five TESS occurrence subscales reached statistical significance (adjusted R square = 37.8%) \((F(5, 46) = 7.91, p = <0.001)\).
  - The strongest predictor and the only one to reach statistical significance was the Resource Loss subscale, with a standardised beta coefficient of 0.577 \((p = .001)\).
- The model using the five TESS distress subscales reached statistical significance (adjusted R square = 46.5%) \((F(5, 46) = 9.87, p = <0.001)\).
  - The strongest predictor and the only one to reach statistical significance was the Resource Loss subscale, with a standardised beta coefficient of 0.427 \((p = .001)\).
Being anxious... poor prognosis?

- Results indicate that the population studied appeared to behave more like a population without mental health issues.
  - Majority (43) did not report developing new mental health issues since experiencing the earthquakes.
- Experiences during the trauma appear to play an important part in predicting poorer psychological functioning.
- Specifically, loss to resources such as your home, clothing, water, food and finances appears to reliably predict the development of post-traumatic symptoms.
- Distress while coping with these lost resources also appears to predict the development of post-traumatic symptoms.
Comparisons with other research

- Perceived distress on the TESS may be better predictor of posttraumatic outcomes (Elal & Slade, 2005).

- Data from 2005 Northern Pakistani earthquake found severity of PTSD symptoms was significantly positively correlated with trauma exposure measured by the TESS (all occurrence subscales) (Ehring, Razik & Emmelkamp, 2011).
  - Only total Distress and ‘Exposure to the Grotesque’ distress were significant in predicting PTSD severity.

- Further research in Pakistan found that living in a tent 18 months after the 2005 earthquake was predictive of general psychiatric morbidity (Naeem et al, 2011).
  - Damage to own home was predictive of PTSD.

- Data collected after the Yunnan Province earthquakes in China indicated that poor perceived economic status, years of education and psychological distress after the quakes predicted PTSD (Yuan et al, 2012).
Limitations and Future research

- Small sample size- only seven participants reported developing new mental health issues.
- No record of where/which suburb participants were living in at the time of the earthquake.
- Subjective rating of anxiety disorder prior to earthquake.

Future research-
- Impact of earthquakes in other mental health populations? Depression, drug and alcohol.
- How does the TESS predict outcomes in Christchurch population without mental health issues?
Factors for consideration?

- What about the impact of ongoing resource loss on individuals and communities?
  - Struggles with insurance companies and EQC impacting on house re-building.
  - Renting crisis
  - Job loss
  - Financial difficulty due to increased travel, increased rent.

- Where should money be invested after a trauma?
  - Roads?
  - Rebuilding infrastructure
  - Rebuilding personal homes?

- What about impact of multiple traumas?
References

References