

The Relationship Between Psychological Resilience and Posttraumatic Stress in Young Adults Exposed to an Earthquake

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Introduction

- Christchurch:
 - Population of 368,000, main city in the south island of New Zealand.
- Earthquake 1:
 - 4.35 a.m. on 4 September 2010, magnitude 7.1, centred near Darfield, no deaths, NZ\$3 billion worth of damage.
- Earthquake 2:
 - 12.51 p.m. on 22 February 2011, magnitude 6.3, centred 6km south-east of the city, depth only 2 km, 185 deaths, 3000 injured.

Earthquakes in New Zealand

- New Zealand lies on the Pacific Ring of Fire
- This particular fault line was not known
- 15,000 earthquakes per year, but only 200 are felt.
- The other major earthquake that has occurred in New Zealand is the 1931 Napier Earthquake where 256 people died.

Theories of Psychological Resilience

- Social cognitive theory (Bandura 1997)
- Conservation of resources theory (Hobfoll, 1989),
- Learning theory (Başoğlu & Şalcioğlu, 2011)
- Five part model (de Terte, Becker, & Stephens, 2009)

Method: Sample

- 525 Participants
- Age range: 13 to 20 years ($M = 15.20$ years; $SD = 1.48$)
- 90% of the sample were within 25 km of both epicentres
- The participants were sampled approximately 6 months after the February earthquake.

Constructs/Measures

- PTSD measured with the Child PTSD Symptom Scale (CPSS; Foa, Johnson, Feeny & Treadwell, 2001).
- Resilience measured with the 10-item Connor-Davidson Resilience Scale (CD-RISC-10; Connor & Davidson, 2003); and the Resilience Scale for Adolescents (READ; Hjemdal, Friborg, Stiles, Martinussen & Rosenvinge, 2009).

Constructs/Measures

- Trauma Exposure was measured with items adapted from the Survivor Information Form (SIF; Salcioglu, Basoglu, & Livanou, 2007).
- Fear measured with items adapted from the SIF (Salcioglu, Basoglu, & Livanou, 2007).

Method: Procedure

- Ethics approval was obtained from the Massey University Ethics Committee
- 10 out of 32 possible secondary schools were approached.
- Six schools elected to allow the pupils to complete the study.
- Some of the survey was completed in an online survey whilst some elected to complete a pen-paper version of the questionnaire.
- The questionnaire took approximately 20 minutes

Hypotheses

1. That there would be a relationship between trauma exposure and PTSD.
2. That there would be an inverse relationship between resilience and PTSD.
3. That resilience would moderate the relationship between trauma exposure and PTSD.

Results

- Statistical tests showed that the sample was equivalent to the population.
- 24% of the sample had a score above the recommended cutoff for PTSD.
- Only 13% percent of males scored above the cutoff in contrast to 34% of females.

Hypothesis 1

That there would be a relationship between trauma exposure and PTSD.

Pearson Product-Moment Correlation for Primary Measurement Scales

Measure	1	2	3	4	5	6	7
1. CPSS	-						
2. Functional Impairment	.61**	-					
3. CD-RISC 10	-.31**	-.28**	-				
4. READ	-.11*	-.21**	.66**	-			
5. Trauma Exp.	.34**	.27**	-.18**	-.07	-		
6. Fear Scale	.57**	.28**	-.17**	.11*	.32**	-	
7. Psychosocial Support Scale	.30**	.19**	-.04	.14*	.12**	.31**	-

Hypothesis 2

That there would be an inverse relationship between resilience and PTSD.

Pearson Product-Moment Correlation for Primary Measurement Scales

Measure	1	2	3	4	5	6	7
1. CPSS	-						
2. Functional Impairment	.61**	-					
3. CD-RISC 10	-.31**	-.28**	-				
4. READ	-.11*	-.21**	.66**	-			
5. Trauma Exp.	.34**	.27**	-.18**	-.07	-		
6. Fear Scale	.57**	.28**	-.17**	.11*	.32**	-	
7. Psychosocial Support Scale	.30**	.19**	-.04	.14*	.12**	.31**	-

Hypothesis 3

That resilience would moderate the relationship between trauma exposure and PTSD.

Hypothesis 3

- Resilience, as measured by the CD-RISC did not moderate the relationship between trauma exposure and PTSD symptoms.
- However, results showed that resilience did moderate the relationship between fear and PTSD. The resilience and fear interaction term explained a significant increase in the variance of PTSD, R^2 change = .008, $F(1, 491) = 6.78$, $p = .009$.

Pearson Product-Moment Correlation for Primary Measurement Scales

Measure	1	2	3	4	5	6	7
1. CPSS	-						
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6. Fear Scale	.57**	.28**	-.17**	.11*	.32**	-	
7. Psychosocial Support Scale	.30**	.19**	-.04	.14*	.12**	.31**	-

Discussion

- Only 24% of the sample showed symptoms of PTSD
- Higher prevalence with females.
- CD-RISC measured a different resilience construct than the READ
- CD-RISC: ability to cope with adversity.
- READ: personal competence, social competence, ability to plan and organise, social resources, and family cohesion.
- Resilience did not moderate the relationship between trauma exposure and PTSD, but did moderate the relationship between fear and PTSD.

Implications & Limitations

- Implications:
 - Gender
 - Target fear during treatment
 - Increase a person's resilience
- Limitations
 - Cross-sectional design
 - Response bias
 - No comparison data

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