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Background & Research Purposes

- A body of research has suggested that experiencing a highly stressful life event can challenge our **core beliefs**, which in turn can lead to **posttraumatic growth (PTG)** – positive psychological growth resulting from struggling with a stressful life event (e.g., Cann et al., 2010; Tedeschi & Calhoun, 2004).
- The current study builds on existing research by investigating the relationships between examination of core beliefs and PTG among Japanese young adults who experienced earthquake in March 11th 2011.
- Based on the **PTG theoretical model** (Calhoun, Cann, & Tedeschi, 2010; Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 2004), we hypothesized that greater examination of core beliefs would be associated with higher PTG after controlling for known predictors of PTG such as perceived stressfulness, intrusive and deliberate rumination.

Methods

Participants

A total of 320 undergraduate students participated in the study, with ages ranging from 18 to 36.

Measures

- **Posttraumatic Growth Inventory (PTGI: Tedeschi & Calhoun, 1996)**: Participants rated the degree to which they experienced each change on a six point Likert scale (0: *not at all*; 5: *a very great degree*). It contains 21 items and 5 domains. We used the Japanese translated version of the PTGI (Taku et al., 2007).
- **Perceived Stressfulness**: Participants rated how stressful it was during the time the earthquake occurred, on a scale of 1 (*not at all*) to 7 (*extremely stressful*).
- **Core Beliefs Inventory (CBI: Cann et al., 2010)**: Participants were asked to indicate the extent to which the event (i.e., earthquake) led them to seriously examine their core beliefs using a six point Likert scale (0: *not at all*; 5: *a very great degree*). We used the Japanese translated version of the CBI with the permission of the original authors.
- **Event-Related Rumination Inventory (ERRI: Cann et al., 2011)**: Cognitive processing such as intrusive and deliberate rumination in the aftermath of experiencing the Great East Japan Earthquake was assessed using a Japanese translated version of the 20-item ERRI. Of 20 items, 10 items measure intrusive, mostly automatic and often undesired, ruminative thoughts. The remaining 10 items measure deliberate and more constructive ruminative thoughts. The participants rated the degree to which the thoughts occurred using a four point scale (0: *not at all*; 3: *often*).

Results

- Of 320 participants, 177 reported that they were directly affected by earthquake. Stressfulness at the time of the earthquake was higher for them than those who reported they were not affected.

	Mean	Std. Deviation
PTGI 21items (0-5)	1.6475	.91153
CBI 9items (0-5)	1.8240	1.06446
ERRI Deliberate 10items (0-3)	1.4150	.67807
ERRI intrusive 10items (0-3)	1.2546	.67879
Perceived Stressfulness (1-7)	4.75	1.372

- Using this sub-sample, hierarchical multiple regression analysis was performed to test the hypothesis.
- The demographic variables (age and gender) were entered first. The known predictors (intrusive rumination, deliberate rumination, and perceived stressfulness at the time of the event) were entered second. CBI scores were entered third.
- All predictors were linearly transformed to reduce the multicollinearity problems.
- The first model explained 0.9% of the variance for PTGI total scores, indicating that there are no age or gender relationships with PTG.
- Addition of the known factors improved prediction, R^2 change = .29, $p < .001$, with deliberate rumination as the only significant predictor ($\beta = .44$, $p < .001$).
- In Step 3, the model was improved by addition of CBI scores, R^2 change = .09, $p < .001$. In the final model, CBI was the strongest predictor ($\beta = .38$, $p < .001$), followed by deliberate rumination ($\beta = .23$, $p < .05$), supporting our hypothesis.
- Greater level of examination of core beliefs and deliberate rumination were associated with higher level of PTG.

Discussion

- The current results demonstrated that the perceived disruption of the assumptive world (i.e., **core beliefs**), as well as constructive cognitive processing, caused by experiencing the 3.11 earthquake have a significant role in PTG among Japanese people.
- This is the first demonstration of the importance on core belief disruption in a non-Western sample.
- Although reports of PTG have generally been lower in Japanese samples, the current findings support the application of the PTG model and its assumed underlying processes among Japanese participants.
- The CBI and the ERRI produced results in this Japanese sample consistent with those found in Western samples (e.g. Cann et al., 2011).
- Since the current study used a single, common event (i.e., Great East Japan Earthquake) as a focus for all participants, this study was able to investigate the wider individual differences in the level of reexamination of core beliefs. Additional research is needed to determine what can explain the variability of the level of reexamination of core beliefs, since most studies set the CBI as a predictor variable for PTG.

Any questions please email taku@oakland.edu

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		Unstandardized Coefficients B	Standardized Coefficients Beta	t	Sig.
1	(Constant)	34.939		23.654	.000
	age	-.677	-.068	-.864	.389
	gender	2.272	.059	.754	.452
2	(Constant)	34.960		27.903	.000
	age	-1.134	-.113	-1.660	.099
	gender	-.304	-.008	-.113	.910
	ERRI deliberate	12.277	.439	5.087	.000
	ERRI intrusive	4.582	.161	1.743	.083
	Stressfulness then	-.648	-.046	-.630	.529
3	(Constant)	35.051		29.749	.000
	Age	-.979	-.098	-1.523	.130
	Gender	-.755	-.020	-.298	.766
	ERRI deliberate	6.376	.228	2.461	.015
	ERRI intrusive	3.294	.116	1.324	.187
	Stressfulness then	-.543	-.039	-.562	.575
	CBI	6.820	.379	4.716	.000

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