Survived, Then Thriving: Exploring PTSD Trajectories and Path to Posttraumatic Growth after the Chi-Chi Earthquake

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Introduction: This paper reports on two studies designed to investigate the 20-year trajectories of posttraumatic stress disorder (PTSD) symptomatology and explore potential mediating model for posttraumatic growth (PTG) in a 20-year follow-up study of impacted residents in the epicenter (Puli District and Dongshi District) of the Chi-Chi Earthquake.

Methods: Study 1, with 20-year longitudinal design, consisted of 107 participants, with 69.2% females and 79.4% married. Of all, about three fourths had property loss and house damage. They were surveyed at most 4 times, the first one at 2 years after the earthquake, with a mean age of 42.20±9.13 years, and the latest one, 20 years after the earthquake, a mean age of 60.64±8.08 years. Measurement includes objective exposure and subjective exposure assessed at 2 years after the disaster, PTSD symptoms measured at 2, 3, 5, 20 years after the disaster, and social acknowledgment measured at 20 years after the disaster. Multilevel modeling analysis was used to explore the effects of objective exposure, subjective exposure, and time on PTSD symptoms. The PTSD symptom trajectories were identified with latent class mixed models (LCMM). The differences of social acknowledgment among individuals with various trajectories were compared using the Kruskal-Wallis H test. Study 2, a cross-sectional study conducted at 20 years after the disaster, recruited 420 participants with a mean age of 55.17±11.73 years, 66.9% females, 73.3% married, and 57.8% had house damage. Bootstrapping and path analysis were employed to examine the serial mediation effects of exposure, social acknowledgment, and disaster experience disclosure on PTG.

Results: First, as shown in Figure 1, analyses of LCMM identified four PTSD symptom trajectories along the 20 years after the earthquake, including: 1) resilient group, who displayed symptom-less throughout the process; 2) recovered group, who have experienced some PTSD symptoms in the first couple of years and then recovered to almost little symptom; 3) delayed onset group, who showed symptom-less in the beginning, with no difference from the resilient individuals, but then developed some symptomatology to the extent closer to those with chronic symptom; and 4) chronic traumatized symptom group, who displayed more PTSD symptoms in the beginning years and stayed with similar pattern throughout the process. These together leave most participants (88.8%) with only little PTSD symptoms at the 20th year after the earthquake. In Study 2, it was found that only positive social acknowledgment, but not negative social acknowledgment, could relate to PTG. Moreover, as shown in Figure 2, a serial mediation effect of positive social acknowledgment followed by disaster experience disclosure exhibited a better fit in the path model from trauma exposure to PTG.

Conclusion: In line with extant research that some individuals exposed to extreme traumas

may be at high risk for PTSD (Goenjian et al., 2018), while most exposed adults are resilient or may naturally recover and even grow after the disaster (Bonanno et al., 2006), our findings reveal, most survivors of Chi-Chi earthquake adjust generally well and even grow to some extent; nevertheless, some impacted individuals have been still suffering from PTSD symptoms. Severe trauma exposure and negative social acknowledgment may contribute to PTSD symptomatology, whereas positive social acknowledgment and disaster experience disclosure could mediate the path to PTG. These are also consistent with the study that social acknowledgment should be regarded as a protective or resource factor in the aftermath of trauma, and negatively related to PTSD symptoms (Maercker et al., 2009), and in the process support and disclosure may also play a role (Lindstrom et al., 2013; Tedeschi & Calhoun, 2004). The findings together may shed lights on the need of quick implantation of post-disaster psychological prevention programs, especially for the impacted residents of the epicenter. Suggestions for future research are also addressed.

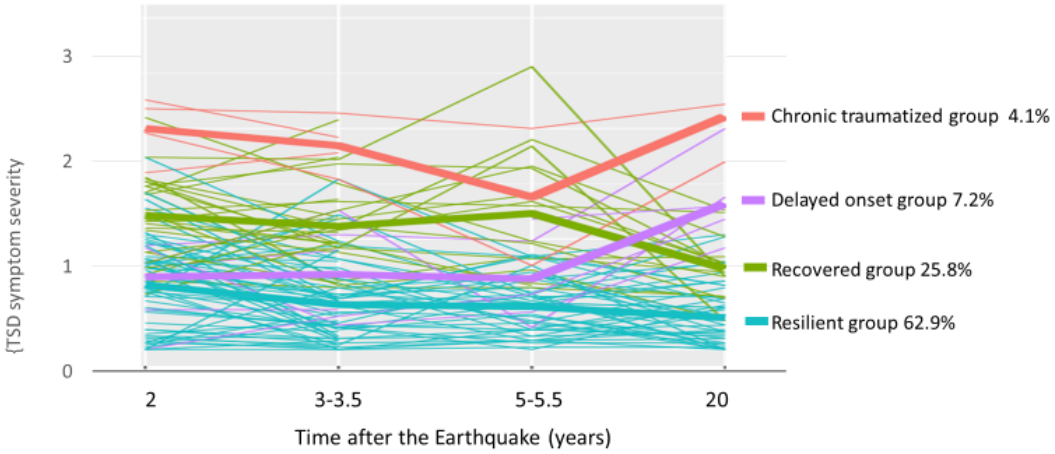

Figure 1. PTSD Symptom Trajectories over the 20 years after the 1999 Chi-Chi Earthquake.

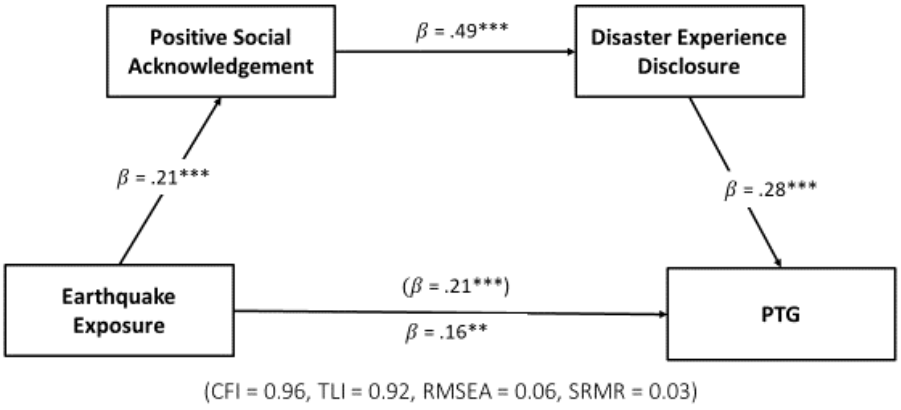

Figure 2. Path Model from Earthquake Exposure to PTG via Serial Mediation of Positive Social Acknowledgement and Disaster Experience Disclosure.

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