

Key Role of Deliberate Rumination in Posttraumatic Growth Among Sexually Traumatized Survivors

TzuTing Liu*

Ming Chuan University, Taiwan, China

* Corresponding Author Email: diana930241@gmail.com

Abstract. This article discusses the relationship between posttraumatic growth and deliberate rumination and main cause of deliberate rumination. As Tedeschi & Calhoun (2004) mentions, the concept of posttraumatic growth (PTG), people who experiences a traumatic event not only show posttraumatic symptoms but can also have a positive change in mentality afterwards. According to the research of Hannah Stockton (2011), PTG is positively correlated with deliberate rumination. The model of PTG proposed by Tedeschi & Calhoun (2004) shows that after experiencing a traumatic event, the individual will encounter cognitive challenges, a change in goal of life and beliefs and enter the stage of intrusive rumination. In the stage of intrusive rumination, in the process of self-disclosure or after a period of time, the patient will give up past cognition, undergo a change in mood, and then enter the stage of refined rumination, which is shown to rebuild cognition, and altered priorities.

Keywords: posttraumatic growth (PTG), Traumatic, Deliberate Rumination, Sexual abuse, Posttraumatic Stress Disorder (PTSD).

1. Introduction

The "Fang Siqu" incident in Taiwan in 2017, the movie "Three Girls" based on a real event in the United Kingdom, and the #MeToo movement in the United States are all examples that sexual assault and sexual violence have become a prominent topics in society. However, most victims of sexual assault and sexual violence choose to stay silent mainly because the trauma they experienced leads to the feeling of being ashamed and dehumanized.

According to World Health Organization, the definition of sexual violence is "Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work"(World Health Organization, 2011.) In Taiwan, sexual assault is defined as any sexual act by means of rape, coercion, intimidation, hypnotism, drug control or any other means against a person's will. Regardless of mutual consent, if either person is under the age of 16, it is also considered sexual assault (Taiwan Sexual Assault Crime Prevention Act).

When incidences of sexual violence or sexual assault happen, they can be very traumatic. Traumatic events can be unexpected, unimaginable, and devastating which can easily lead to trauma (Monahan, 1993). As mentioned in Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5), trauma is defined as "actual or threatened death, serious injury, or sexual violence"(DSM-5). This can cause intrusive symptoms, denial of trauma, negative cognitive and emotional changes, irritable behavior and other arousal and reactivity changes.

After experiencing a traumatic event, the survivors view the world as dangerous and subconscious. They also avoid trauma-related thoughts and activities which gradually develops into PTSD (Foa & Cahill, 2001). There are five criteria for PTSD as mentioned in DSM-5, "first, direct or indirect exposure to a traumatic event, followed by symptoms in four categories: intrusion, avoidance, negative changes in thoughts and mood, and changes in arousal and reactivity"(DSM-5).

In addition to the common symptoms of PTSD, there are some studies focus on the symptoms specific to sexual assault victims. Sexual assault victims have three symptoms: physical trauma, psychological trauma (such as panic, shame, depression, low self-esteem, anger, etc.) and behavioral trauma (such as premature sexual game, excessive sexual behavior, running away, etc.) [2]. As

proposed by Burgess & Holmstrom (1974), victims develop rape trauma syndrome (can be regarded as a special type of PTSD) and posttraumatic stress response [3]. There are two phases of rape trauma syndrome, acute or disruptive phase and long-term process of reorganization. The acute or disruptive phase can begin in days to several weeks after being sexually assaulted and can last for a few days or weeks. The general stress symptoms may include body aches, insomnia, etc. Long-term process of reorganization often begins after the end of acute stage and can last from several months to several years. When the survivors are trying to restore or reconstruct their original life and regain control, they may experience sexual assault-related trauma, such as nightmares, fear, sexual disorder, etc. [3].

According to Tedeschi & Calhoun (2004), the concept of posttraumatic growth (PTG), people who experience a traumatic event not only show posttraumatic symptoms but can also have a positive change afterwards. Post-traumatic growth has five main factors, personal strength, new possibilities, improved relationships, spiritual growth, and appreciation for life (Tedeschi & Calhoun, 1996). The model of PTG proposed by Tedeschi & Calhoun (2004) describes the process of physical and mental reconstruction after traumatic experience. They believe that the original values, life goals and beliefs of the survivors have been destroyed by the traumatic event accompanied by strong negative emotional reactions (such as depression, anxiety, etc.). This is followed by automatic and intrusive cognitive rumination (eg, involuntary thought of traumatic events, excessive self-blame).

After a period of time, individuals will gradually disclose their feelings about trauma through several means such as writing, talking to others, etc. Meanwhile they might be supported by their social networks. Social support helps them to cope with distress and intrusive rumination which is unaffordable initially. These processes promote them to disengage previous values, goals and beliefs which no longer work after trauma, and encourage them to dedicate themselves to deliberate rumination which is deeply thinking about the meaning of trauma. "Disengagement" gives individual opportunity to rebuild the more adaptive value, goal and belief, and to consciously reflect on the meaning of trauma and life, and to reconstruct the new life narratives. This is the manifestation of PTG.

In this study, we explore whether the long-term process of reorganization proposed by Burgess & Holmstrom (1974) is consistent with the concept of Posttraumatic Growth (PTG) proposed by Tedeschi & Calhoun (2004), and whether trauma is a key factor of deliberate rumination in posttraumatic growth.

2. Method

Gather approximately 200 volunteers through internet for this study who may have experienced traumatic events such as sexual assault, sexual violence and sexual abuse, etc. Participants will be provided with relevant information about the study and fill out online surveys. The surveys will be asking the participants to describe their traumatic event experience including when it happened and at what age they experienced this event and how the participants look at distressing events. This survey will be able to collect data on the participants and demographic variables.

The participants will also be asked to complete the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) and the Event-Related Rumination Inventory (ERRI) measurement charts.

3. Participant Data and Demographic Variable:

1. Gender:
Female/Male
2. Age:
3. Highest Education:
middle school or lower
high school
college

university

masters,

or doctorate.

4. Employment status:

full-time students

employed (including working students, part-time work-study, housekeeper)

unemployed (including looking for a job)

retired.

5. Marital status:

never married

divorced

married (widowed)

married (separated)

married (including remarriage).

6. Describe the traumatic event(s)

7. Time of the event

8. Age at the time of the incident and

9. How does the participant look at distressing events

Posttraumatic Growth Inventory (PTGI) is used to evaluate posttraumatic growth and self-improvement of a person who experienced a traumatic event (Tedeschi & Calhoun, 1996). There are 21 items within this inventory mainly related to five main factors: personal strength, new possibilities, improved relationships, spiritual growth and appreciation for life (Tedeschi & Calhoun, 1996).

PTGI overall internal consistency coefficient: 0.90

Personal strength consistency coefficient: 0.85

New possibilities consistency coefficient: 0.72

Improved relationships consistency coefficient: 0.84

Spiritual growth consistency coefficient: 0.85

Appreciation for life consistency coefficient: 0.67

The factor loading of the five factors is between 0.54 to 0.85, explaining 62% of the total variance which means its reliability and validity is quite good.

Another PTGI proposed by Ho et al. (2004) is a four factor model: (1) Self, measuring self-change, including willingness to express emotions, developing new interests, opportunities, (2) Spiritual, measuring change in post-trauma beliefs and life, (3) Life Orientation, measuring the change in priority of beliefs and life and (4) Interpersonal, measuring change in post-trauma relationships with others. The above four factors can explain 59.93% of the variance, and the internal consistency coefficient of whole scale is 0.825.

Event-Related Rumination Inventory (ERRI) developed by Cann and colleagues assesses posttraumatic repetitive thinking with a two factor model of deliberate rumination and intrusive rumination (Cann et al., 2011). Each factor has 10 items using a 4 point Likert scale (0 to 3, 0 = never, 1 = sometimes, 2 = often, 3 = always) with a total of 0 to 30 points. The higher the score, the higher the frequency of rumination. The ERRI has a stable reliability ($\alpha=0.88$) and good construct validity (Cann et al., 2011).

Xiao Hong Liu, who has not yet published, has translated this scale into a simplified Chinese version (C-ERRI). Chao Qun Dong (2013) 320 participants who experienced accidental trauma to test the reliability and validity of the C-ERRI. The results showed that the Chinese version of the translation also has good internal consistency with the internal consistency reliability of the whole scale at $\alpha=.92$, intrusive rumination at $\alpha=.93$, and deliberate rumination at $\alpha=.85$.

4. Result

All data in this paper are obtained by web survey. The data set consists of 55 subject of victims of sexual abuse and sexual violence in Taiwan. There are 47 females and 8 males in the sample with a mean of age of 33.75.

The variables used in this paper are to assess the relationship between posttraumatic growth and deliberate rumination. The variable *Time_Pass* represents how long it has been since the client experienced the trauma. *Time_Pass* is calculated by subtracting the subjects current age with the age when the trauma happened. The *PTGI* variable uses the Posttraumatic Growth Inventory with 21 items (PTGI; Tedeschi & Calhoun, 1996). *PTGI* is calculated with the sum of the scores of the 21 items. The *ERRI_Intrusive* variable uses the 10 invasive items in the Event-Related Rumination Inventory (ERRI). *ERRI_Intrusive* is calculated with the sum of the scores of the 10 items. The *ERRI_Deliberate* variable uses the 10 refined items in the Event-Related Rumination Inventory (ERRI). *ERRI_Deliberate* is calculated with the sum of the scores of the 10 items.

5. Correlation

The correlations between the variables are reported in Table 1. It is shown that time interval has a positive correlation with post traumatic growth (PTG) with a correlation coefficient of 0.38, a weak negative correlation with intrusive rumination with a correlation coefficient of -0.18, and a positive correlation with deliberate rumination with a correlation coefficient of 0.36. This indicates that the longer the time has passed, the more deliberate rumination happens and more obvious the PTG, and less intrusive rumination.

In addition, intrusive rumination was negatively correlated with PTG with a correlation coefficient of -0.32, which means that the more intrusive rumination, the less obvious and less PTG. Deliberate rumination was positively correlated with PTG with a correlation coefficient of 0.5 which shows that the more deliberate rumination, the more obvious the PTG.

Intrusive rumination and deliberate rumination have a weak negative correlated with correlation coefficient of -0.18, indicating that the more intrusive rumination, the lower the deliberate rumination, meaning that the two thinking modes may inhibit each other.

In summary the correlation analysis results indicates that the longer the time has passed, the more obvious the post-traumatic growth, and the two rumination models are related in different degrees to time interval and post-traumatic growth.

Table 1. Correlation Matrix

	Time_Pass	PTGI	ERRI_Intrusive	ERRI_Deliberate
Time_Pass	1.0000000	0.3793475	-0.1830545	0.3560575
PTGI	0.3793475	1.0000000	-0.3162231	0.5030414
ERRI_Intrusive	-0.1830545	-0.3162231	1.0000000	-0.1773388
ERRI_Deliberate	0.3560575	0.5030414	-0.1773388	1.0000000

6. Mediator

Table 2. Mediation effect of deliberate rumination

	Dependent variable:			
	scale(ERRI_Deliberate) (1)	(2)	scale(PTGI) (3)	(4)
scale(Time_Pass)	0.356*** (0.128)		0.379*** (0.127)	0.229* (0.124)
scale(ERRI_Deliberate)		0.503*** (0.119)		0.421*** (0.124)
Constant	0.000 (0.127)	-0.000 (0.118)	-0.000 (0.126)	-0.000 (0.115)
Observations	55	55	55	55
R2	0.127	0.253	0.144	0.299
Adjusted R2	0.110	0.239	0.128	0.272
Residual Std. Error	0.943 (df = 53)	0.872 (df = 53)	0.934 (df = 53)	0.853 (df = 52)
F Statistic	7.695*** (df = 1; 53)	17.955*** (df = 1; 53)	8.909*** (df = 1; 53)	11.088*** (df = 2; 52)
Note:	*p<0.1; **p<0.05; ***p<0.01			

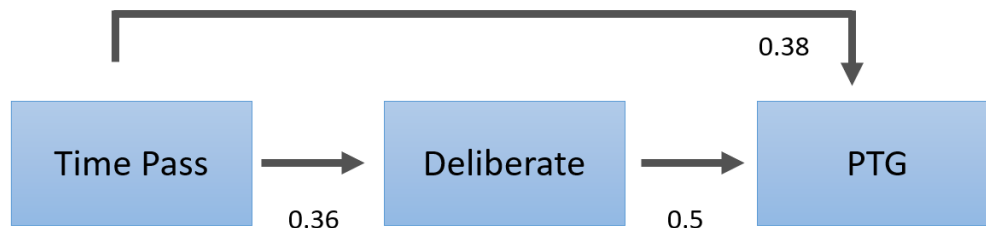


Figure 1. Mediation effect

Table 2 shows the regression analysis which is used to predict the hypothetical result using the relationship between time_pass, EERI_deliberate and PTGI. Figure 1 shows the relationship between these variables and their standardized regression coefficients.

1. Prediction of PTG by time

It is shown that the amount of time passed since trauma incident can predict the posttraumatic growth performance with standardized regression coefficient of 0.38 which is positive and statistically significant. This shows that the longer the time has passed, the higher the post-traumatic growth scale score.

2. Prediction of deliberate rumination by time

The amount of time passed since trauma incident can predict deliberate rumination with standardized regression coefficient of 0.36 which is positive and statistically significant. This indicates that the longer the time has passed, the more the subject will engage in deliberate rumination.

3. Prediction of PTG by deliberate rumination

Deliberate rumination can predict posttraumatic growth with a standardized regression coefficient of 0.5 and the prediction is positive and statistically significant. This means that when the subject is more inclined to engage in deliberate rumination the higher the performance of post-traumatic growth.

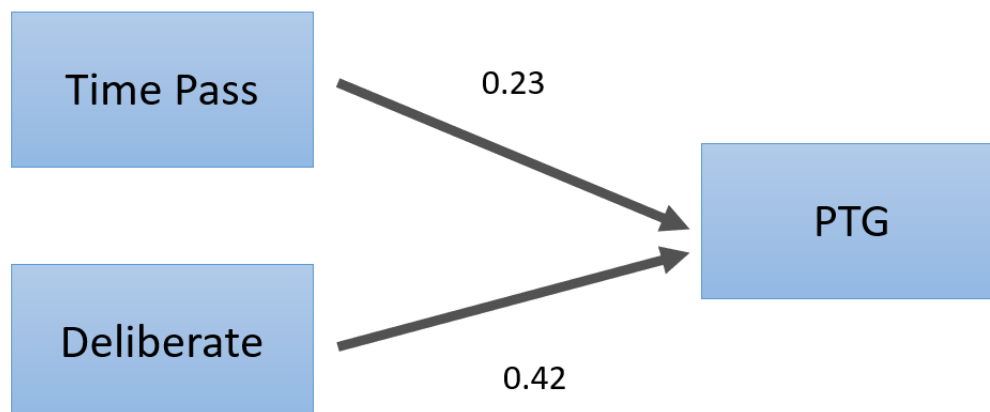


Figure 2. time and deliberate predict PTG simultaneously

4. Prediction of PTG by time and deliberate rumination

When using both time passed and deliberate rumination to predict post-traumatic growth the regression coefficient of deliberate rumination is 0.42 which is positive and statistically significant, however, the regression coefficient of time passed is 0.23 which is positive but not statistically significant with $p > .5$. If I consider both how long time has passed and deliberate rumination in this prediction model, the effect of time passed will be lost. Figure 2 shows this model and its standardized regression coefficients.

According to the results of the above four regression studies, it is shown time passed since trauma incident does not have a direct effect on PTG. Time passed has a direct effect on deliberate rumination

and deliberate rumination has a direct effect on PTG, therefore, deliberate rumination is the mediator between time passed and PTG.

7. Conclusion

The results of this paper show that there is an indirect relationship between time passed since traumatic event and PTG with deliberate rumination as a mediator in between. Deliberate rumination is a requirement in order to have PTG.

This study confirms that the post-traumatic growth model proposed by Tedeschi is applicable to victims of sexual assault and sexual violence showing that victims need to engage in deliberate rumination in order to achieve post-traumatic growth. Although victims may also achieve post-traumatic growth through time, it is not the main or direct factor. The time gives the victim a chance to think which means the victim will have more opportunities to engage in deliberate rumination.

Findings of this study provide a recommendation for traumatic psychological treatment. It is very common to hear “time will heal everything” to comfort people who are in pain, however, therapists should not just wait for time to pass which may prevent the victim from moving forward and grow. Therapists should take the victim through active and meaningful thinking about the traumatic event and to prevent the victim from suppression helping the victim find meaning and reconstruct new and adaptive cognitions. Change in cognition is an important factor in catalyzing traumatic events. Meaningful thinking enables victims to sublimate the traumatic event and incorporate it into their new personal identity finding meaning and spiritual growth.

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