

Association between virtues and posttraumatic growth: Preliminary evidence from a Chinese community sample after earthquakes

Wenjie Duan, Pengfei Guo

Relationship, Vitality, and Conscientiousness are three fundamental virtues that have been identified recently. This study attempted to explore the relationship between the three constructs and post-traumatic growth (PTG) in three directions, including indirect trauma samples without post-traumatic stress disorder (PTSD), direct trauma samples without PTSD, and direct trauma samples with PTSD. A total of 340 community participants from Sichuan Province, Mainland China involved in the study, most of which experienced Wenchuan and Lushan Earthquake. Results indicated significant and positive correlations between virtues and PTG. In the indirect trauma samples, vitality explained 32% variance of PTG. In reference to the direct trauma sample without PTSD, both relationship and conscientiousness explained 32% variance of PTG; whereas in the direct trauma sample with PTSD, only conscientiousness accounted for 31% the variance in PTG. These results preliminarily revealed the role of virtues with important implications for strengths-based treatment.

Association between Virtues and Posttraumatic Growth: Preliminary Evidence from a Chinese
Community Sample after Earthquake

Wenjie Duan

Department of Applied Social Sciences, City University of Hong Kong, Hong Kong, China

Pengfei Guo

Hospital (T. C. M.) Affiliated to Luzhou Medical College, Luzhou, Sichuan, China

Address for correspondence: Pengfei Guo, Party Committee Office, Hospital (T. C. M.) Affiliated to
Luzhou Medical College, Luzhou, Sichuan, China. (Telephone: +86-152-9829-9409; Email:
lyzyydb@163.com)

Association between Virtues and Posttraumatic Growth: Preliminary Evidence from a Chinese Community Sample after Earthquakes

INTRODUCTION

Natural disasters, cancer, bereavement, and other life-threatening events with potentially irreversible consequences often lead to positive changes and transcendence known as posttraumatic growth (PTG, Calhoun & Tedeschi 2006; Tedeschi & Calhoun 2004). A promising research direction focuses on the effects of personal strengths on coping and responses to health- and wellbeing-related concerns and worries, such as traumatic events (Hampson & Friedman 2008).

To date, the most systematic approach for studying personal strengths is the Values in Action Classification developed by Peterson & Seligman (2004); this approach included 24 character strengths (e.g., hope, self-regulation, and gratitude) grouped into six core virtues (e.g., wisdom, courage, and humanity). They conceptualized virtue as “a property of the whole person and the life that person leads” (p. 87), which is a personal strength appreciated by the whole society (Peterson & Seligman 2004). In the past decade, many studies revealed the positive relationship between these positive qualities and mental health (for review, see Niemiec 2013) and demonstrated that the use of strengths is a valid approach for enhancing wellbeing in diverse populations (Duan et al. 2014; Seligman et al. 2005). Accordingly, the relationship between these qualities and PTG was explored using 1,739 samples from different countries (Peterson et al. 2008). Findings indicated that kindness, love, bravery, hope, and religiousness show stronger relations with PTG than other strengths (Peterson et al. 2008). However, no correlation coefficient was higher than 0.35, thus reflecting weak correlation. Principal component factor analysis revealed a five-factor structure of virtues, namely, interpersonal, fortitude,

35 cognitive, transcendence, and temperance. Correlation analysis showed that all these five virtues
36 correlated with PTG, but all the correlation coefficients were lower than 0.21 (Peterson et al. 2008).

37 Three issues should be noted regarding the study of Peterson et al. (2008). First, the virtue
38 structure in the aforementioned study is questionable. Various studies have found that the 24 identified
39 strengths can be grouped into different virtues in diverse cultures, and the groups include 3-, 4-, or 5-
40 factor structures (Duan et al. 2012b; Ho et al. 2014a). Thus, the virtue structure should be clarified
41 prior to delineating the function of virtues in facing trauma and should be explored and analyzed
42 further. Duan et al. (2012b) adopted the combined emic and etic approaches to select 96 cross-
43 culturally equivalent items from the original 240-item Values In Action Inventory of Strengths by
44 using a Chinese population (Ho et al. 2014b). Exploratory and confirmatory factor analyses revealed 3
45 virtues, namely, relationship, vitality, and conscientiousness (Duan et al. 2013). The relationship virtue
46 reflects “the love, concern, and gratitude of a person toward others”; vitality reflects “the curiosity and
47 zest for creativity of an individual”; and conscientiousness is “an intrapersonal virtue that describes
48 people who persist in achieving goals and exhibit self-control,” which reflects the individual
49 orientation of the virtues (Ho et al. 2014a). Therefore, the relationship between the three virtues and
50 PTG should be reexamined. Second, the research conducted by Peterson et al. (2008) examined only
51 the relationship among trauma samples, which accounted for 56% of the entire population. However,
52 previous studies argued that stress-related life events could likewise facilitate stress-related growth,
53 which is assessed by Posttraumatic Growth Inventory (PTGI), but to a lesser extent than traumatic
54 events (e.g., LoSavio et al. 2011). The level of perceived stress that resulted from events might be the
55 key cause of PTG, rather than the objective and specific events per se. Third, several individuals who

underwent trauma may develop posttraumatic stress disorder (PTSD), whereas others may not (Yehuda & Flory 2007). The above study failed to consider the influence of PTSD on PTG in the trauma samples. An inverted-U curve was also found between PTG and PTSD, which suggested that PTG decreased after a moderate level of PTSD (Levine et al. 2008). Nevertheless, an increasing interest was noted among mental health professionals in determining the strengths of their clients (McCrae 2011).

CURRENT STUDY

To expand our understanding of the function of strengths in PTG, the relationship between virtues and PTG should be explored. Basing on the above literature review, PTG in the current study refers to growth following stress-related events, including daily stressors and traumatic events. Individuals indirectly exposed to traumatic events can be recognized as persons who experienced stress-related events. Accordingly, both direct and indirect trauma groups would acquire PTG, and the differences between these two groups would be insignificant (Hypothesis 1). As previously discussed, a few traumatic individuals may develop PTSD, which implied that the contributions of the three virtues (relationship, vitality, and conscientiousness) to PTG vary depending on trauma type (i.e., direct trauma vs. indirect trauma) and PTSD status (i.e., PTSD group vs. non-PTSD group) (Hypothesis 2). The current results will clarify the contributions of virtues in traumatic situations, which may facilitate a strength-based approach in both research and practice in the future.

METHOD

Participants

A total of 340 qualified respondents (109 males and 231 females) were recruited from different communities in Dujiangyan area, Sichuan, China, which were affected by the 2008 earthquake. A total

of 69 participants were aged 18–25, 101 were in the range of 36–35, 112 were in the range of 36–45, and 58 were above 46 years old. Only 51 participants have obtained a university degree or above. As expected, “natural disaster,” “sudden or unexpected death of someone close to you,” and “life-threatening illness or injury” were the three most endorsed items listed on the questionnaire on traumatic events (Table 1).

(Insert Table 1 Here)

Procedures

The announcement for study participation was published on community bulletin boards, which can be seen by most people who lived in the community. Individuals who were interested to participate were instructed to complete first the Life Events Checklist (LEC), and only the participants who directly or indirectly experienced trauma were qualified to complete the other scale during the following week (screening criteria are described in the Measures section). The Human Subjects Committee of Traditional Chinese Medicine Hospital Affiliated to Luzhou Medical College approved the study. All data collected were anonymous and confidential. Psychological assistance was provided to protect the subjects. Data were collected from December 2013 to April 2014.

Measures

Life Events Checklist. LEC was used to screen individuals who experienced direct or indirect trauma through 17 potential events (Gray et al. 2004). Participants are requested to rate each event on a five-point Likert scale (1 = happened to me, 2 = witnessed it, 3 = learned about it, 4 = not sure, 5 = does not apply). Participants who indicated at least one traumatic event as 1 = “happened to me” were defined as direct trauma samples, whereas respondents who indicated 2 = “witnessed it” and/or 3 =

98 “learned about it” were indirect trauma samples. Participants who selected 4 = “not sure” and/or 5
 99 “does not apply” in the checklist were excluded. Considering that all participants involved in this study
 100 were sampled within the earthquake zone (Dujiangyan area in Sichuan Province), rather than other
 101 place far away from the earthquake-prone area, they should not be treated as persons who lived far
 102 away from Sichuan and were affected by the earthquake only through radio and television. Thus, all
 103 the qualified participants may have experienced at least some indirect exposure to earthquake.

104 ***Chinese Virtues Questionnaire.*** Virtues were assessed using the Chinese Virtues Questionnaire,
 105 which is a 96-item simplified Chinese scale with good psychometric characteristics (Duan et al. 2013;
 106 Duan et al. 2012b). The respondents were requested to rate each item from 1 (very much unlike me) to
 107 5 (very much like me) on a five-point Likert scale. Item samples include “I can accept love from
 108 others” (Relationship), “I like to think of new ways to do things” (Vitality), and “I control my
 109 emotions” (Conscientiousness). A high mean score reflects a high degree of the virtue within an
 110 individual. In this study, the Cronbach’s α values of the three subscales were 0.91 (relationship), 0.85
 111 (vitality), and 0.84 (conscientiousness).

112 ***Posttraumatic Growth Inventory-Chinese.*** A 15-item Chinese version of the PTGI (Ho et al.
 113 2004) measures growth following a traumatic event. The measurement requires individuals to indicate
 114 the extent of their experiences of changes as a result of crisis, ranging from 0 (not at all) to 5 (a very
 115 great degree). The reliability and validity of the 15-item version were accurate in previous studies (Ho
 116 et al. 2004). In the present sample, the Cronbach’s α of the inventory was 0.84.

117 ***PCL-S.*** PTSD symptoms were evaluated by the 17-item PCL-S. Participants are requested to
 118 rate their experience from 1 (not at all) to 5 (extremely). Previous studies demonstrated that the

Chinese version can be used as a screening questionnaire among the Chinese population (Li et al. 2010). Scores of 44 or above indicate a PTSD diagnosis (Blanchard et al. 1996). Responses of the diagnosed PTSD participants also fulfilled the criteria of DSM-IV, including a) “history of a traumatic stressor,” b) “persistent re-experiencing of the traumatic event,” c) “persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness,” and d) “persistent symptoms of increased arousal.” In the current sample, the Cronbach’s α of the entire scale was 0.93.

RESULTS

The descriptive statistics of all variables are listed in Table 2. ANOVA showed that the virtue of relationship and PTG exhibited significant differences among the three samples ($p < 0.05$). Post-hoc tests further revealed that both the relationship and PTG of direct trauma with PTSD sample were significantly lower than those of the other groups ($p < 0.05$). Correlation analysis (Table 3) revealed that different virtues showed significantly positive relations with PTG in the total sample and three subsamples, ranging from 0.39 to 0.56 ($p < 0.01$).

(Insert Table 2 Here)

(Insert Table 3 Here)

Further regression analysis by stepwise method revealed that virtues served different functions in diverse subsamples (Table 4). In the indirect trauma sample, only vitality ($Beta = 0.56$, $t = 6.44$, $p < 0.001$) significantly explained 32% variance of PTG, whereas based on the direct trauma without PTSD sample, relationship ($Beta = 0.38$, $t = 5.98$, $p < 0.001$) and conscientiousness ($Beta = 0.29$, $t = 4.54$, $p < 0.001$) also accounted for 32% variance of PTG. Finally, in the direct trauma with PTSD

sample, only conscientiousness ($Beta = 0.56, t = 3.85, p < 0.01$) can contribute 31% explained variance to PTG.

(Insert Table 4 Here)

DISCUSSION

This research is based on a community sample of people directly or indirectly exposed to trauma (e.g., earthquakes). As expected, no difference of PTG existed between the indirect and direct trauma samples. A previous study indicated that a population indirectly hit by an earthquake could still grow after traumatic experiences (Yu et al. 2010). In the present study, some participants directly experienced an earthquake, whereas some might have indirectly experienced this event through their friends, witnessed the death of a close friend, or experienced the psychological distress caused by the death of a family member or a close friend. Thus, all the participants may undergo PTG. The growth also decreased with increased severity of PTSD, which was partly explained by the inverted-U curve between PTG and PTSD. As reflected by the present results, the correlation between PTG and PTSD was almost significant and negative, particularly in the PTSD sample ($r = -0.31, p = 0.07$). Mol et al. (2005) also investigated 832 individuals and found that the scores of their PTSD were the same for some early-life and traumatic events, which partly revealed that some life events could also generate PTSD symptoms. All these results suggest that the objective traumatic events may not essentially lead to PTG or PTSD. According to the Transactional Model of Stress and Coping (Lazarus & Folkman 1984), the perceived stress from these events could be triggered. Thus, further studies are necessary to understand the differences in PTG and PTSD after traumatic and non-traumatic events.

Our previous studies preliminarily demonstrated that three virtues are positively associated with positive health outcomes (Duan et al. 2012a; Duan et al. 2013; Tang et al. in press), such as satisfaction with life and flourishing, but negatively associated with negative health outcomes (Duan et al. 2013; Duan et al. 2015; Zhang et al. 2014b), such as depression, anxiety, general severity index, and pathological Internet use. These results indicated that the three virtues might be protective factors of mental health. Accordingly, personal virtues may facilitate rebounding for individuals who experienced trauma.

Individuals with different endorsed virtues often occupy different psychological resources (e.g., optimism, emotional control, and gratitude). Thus, they can maximize the use of different resources (i.e., diverse virtues) in various contexts. For instance, an individual with high level of relationship virtue is more adept at obtaining social support from his/her friends and relatives to recover from the trauma and even obtain growth. Thus, the main results of the current study revealed the different potential functions of virtues (i.e., relationship, vitality, and conscientiousness) in PTG. In the indirect trauma samples, only vitality contributed to the variance of growth after trauma. In the direct trauma without PTSD sample, relationship and conscientiousness explained the variance of PTG, whereas in the PTSD sample, only conscientiousness was the significant contributor. Basing on the previous and current findings, we can speculate the different functions of virtues in various samples. Without directly experiencing trauma, most people are troubled by small stress, and some are indirectly affected by trauma. When similar scenarios occur, vitality can cause individuals to perceive less stress, thereby reducing psychological distress (Duan et al. 2015). Our previous study identified that only students with higher vitality have perceived less stress from minor life events, which consequently introduced

180 less psychological distress (Duan et al. 2015). Individuals with high vitality are also more willing to
 181 express their concerns to relieve stress and improve mental health (Zhang et al. 2014a). After being
 182 directly exposed to traumatic events, most people retain psychological balance without significant
 183 symptoms of PTSD (Bonanno et al. 2007). Therefore, interpersonal resources related to the virtue of
 184 relationship are necessary. Prati & Pietrantonio (2009) demonstrated that social support is a significant
 185 contributor to PTG in a meta-analysis of 103 studies. Individuals who are rated high in the virtue of
 186 relationship are more likely to adopt a supportive mechanism to overcome the predicaments caused by
 187 trauma. Finally, conscientiousness, also termed as self-regulation, always facilitates positive mental
 188 health and decreases psychopathology (Hagger 2010). Duan et al. (2015) found that individual
 189 conscientiousness can directly decrease psychological distress, regardless of the level of stress.
 190 Consequently, the intrapersonal strengths reflected by conscientiousness can be used to regulate
 191 emotion, cognition, and behavior to resolve conflicts caused by trauma, thus enhancing growth after
 192 trauma.

193 Some limitations should be noted. First, similar to some studies on trauma, the design of this
 194 study was cross-sectional rather than longitudinal. Results of this research and the hypothesized
 195 functions of virtues in the development process of a traumatic event should be replicated and examined
 196 in future longitudinal designs. Second, the direct and indirect trauma samples were divided based on
 197 self-reported measurements, wherein “indirect trauma” could be anything from hearing about the
 198 traumatic event from a friend to watching it on TV, although they lived in the earthquake zone. These
 199 participants were actually not trauma-exposure types according to DSM or ICD, thereby leaving future
 200 studies to distinguish the two samples objectively. Third, all the data were collected by self-reported

201 method, which may introduce common method bias. Future studies should adopt multiple methods for
 202 controlling the bias. Finally, this study is the first to examine the function of virtues in trauma research
 203 among Chinese. More psychological outcomes, including flourishing, depression, and anxiety, should
 204 be explored in the future.

205

206

References

- Blanchard EB, Jones-Alexander J, Buckley TC, and Forneris CA. 1996. Psychometric properties of the PTSD Checklist (PCL). *Behav Res Ther* 34:669-673.
- Bonanno GA, Galea S, Bucciarelli A, and Vlahov D. 2007. What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of consulting and clinical psychology* 75:671-682.
- Calhoun LG, and Tedeschi RG. 2006. *Handbook of posttraumatic growth: Research & practice*. Mahwah, NJ: Erlbaum.
- Duan W, Bai Y, Tang X, Siu PY, Chan RKH, and Ho SMY. 2012a. Virtues and positive mental health. *Hong Kong Journal of Mental Health* 38:24-31.
- Duan W, Ho SMY, Bai Y, and Tang X. 2013. Psychometric evaluation of the Chinese Virtues Questionnaire. *Research on Social Work Practice* 23:336-345.
- Duan W, Ho SMY, Bai Y, Tang X, Zhang Y, Li T, and Yuen T. 2012b. Factor structure of the Chinese Virtues Questionnaire. *Research on Social Work Practice* 22:680-688.
- Duan W, Ho SMY, Siu BPY, Li T, and Zhang Y. 2015. Role of Virtues and Perceived Life Stress in Affecting Psychological Symptoms among Chinese College Students. *Journal of American College Health* 63:32-39.
- Duan W, Ho SMY, Tang X, Li T, and Zhang Y. 2014. Character strength-based intervention to promote satisfaction with life in the Chinese university context. *Journal of Happiness Studies* 15:1347-1361.

- 227 Gray MJ, Litz BT, Hsu JL, and Lombardo TW. 2004. Psychometric properties of the life events
228 checklist. *Assessment* 11:330-341.
- 229 Hagger MS. 2010. Self-regulation: An important construct in health psychology research and practice.
230 *Health Psychology Review* 4:57-65.
- 231 Hampson SE, and Friedman HS. 2008. Personality and health: A lifespan perspective. In: John PO,
232 Robins WR, and Pervin AL, eds. *Handbook of personality: Theory and research*. 3rd ed. New
233 York, NY, US: Guilford Press.
- 234 Ho SMY, Chan CLW, and Ho RTH. 2004. Posttraumatic growth in Chinese cancer survivors.
235 *Psycho-Oncology* 13:377-389.
- 236 Ho SMY, Duan W, and Tang SCM. 2014a. The psychology of virtue and happiness in western and
237 asian thought. In: Snow NE, and Trivigno FV, eds. *The Philosophy and Psychology of*
238 *Character and Happiness*. New York: Routledge, 215-238.
- 239 Ho SMY, Rochelle TLR, Law LSC, Duan W, Bai Y, Shih S-M, and Wang G-L. 2014b.
240 Methodological issues in positive psychology research with diverse populations: Exploring
241 strengths among Chinese adults. In: Pedrotti JT, and Edwards LM, eds. *Perspectives on the*
242 *Intersection of Multiculturalism & Positive Psychology*. New York, N.Y.: Springer Science +
243 Business Media B.V., 45-57.
- 244 Lazarus RS, and Folkman S. 1984. *Stress, appraisal, and coping*. New York: Springer Publishing
245 Company.

- 246 Levine SZ, Laufer A, Hamama-Raz Y, Stein E, and Solomon Z. 2008. Posttraumatic growth in
247 adolescence: Examining its components and relationship with PTSD. *Journal of Traumatic*
248 *Stress* 21:492-496.
- 249 Li H, Wang L, Shi Z, Zhang Y, Wu K, and Liu P. 2010. Diagnostic utility of the PTSD Checklist in
250 detecting PTSD in Chinese Earthquake victims. *Psychological Reports* 107:733-739.
- 251 LoSavio ST, Cohen LH, Laurenceau J-P, Dasch KB, Parrish BP, and Park CL. 2011. Reports of stress-
252 related growth from daily negative events. *Journal of Social and Clinical Psychology* 30:760-
253 785.
- 254 McCrae RR. 2011. Personality traits and the potential of positive psychology. In: Sheldon KM,
255 Kashdan TB, and Steger MF, eds. *Designing positive psychology: Taking stock and moving*
256 *forward*. New York: Oxford University Press, 193-206.
- 257 Mol SS, Arntz A, Metsemakers JF, Dinant G-J, AP VILTERS-VAN MONTFORT P, and Knottnerus
258 JA. 2005. Symptoms of post-traumatic stress disorder after non-traumatic events: evidence
259 from an open population study. *The British Journal of Psychiatry* 186:494-499.
- 260 Niemiec RM. 2013. VIA character strengths: Research and practice (The first 10 years). In: Knoop
261 HH, and Fave AD, eds. *Well-Being and Cultures: Perspectives from Positive Psychology*. New
262 York, NY: Springer Science+Business Media, 11-29.
- 263 Peterson C, Park N, Pole N, D'Andrea W, and Seligman ME. 2008. Strengths of character and
264 posttraumatic growth. *Journal of Traumatic Stress* 21:214-217.
- 265 Peterson C, and Seligman MEP. 2004. *Character strengths and virtues: A handbook and classification*.
266 Oxford University Press, USA.

- 267 Prati G, and Pietrantonio L. 2009. Optimism, social support, and coping strategies as factors
268 contributing to posttraumatic growth: A meta-analysis. *Journal of Loss and Trauma* 14:364-
269 388.
- 270 Seligman MEP, Steen TA, Park N, and Peterson C. 2005. Positive psychology progress: empirical
271 validation of interventions. *American Psychologist* 60:410-421.
- 272 Tang X, Duan W, Wang Z, and Liu T. in press. Psychometric Evaluation of the Simplified Chinese
273 Version of Flourishing Scale. *Research on Social Work Practice*.
- 274 Tedeschi RG, and Calhoun LG. 2004. Posttraumatic growth: Conceptual foundations and empirical
275 evidence. *Psychological Inquiry* 15:1-18.
- 276 Yehuda R, and Flory JD. 2007. Differentiating biological correlates of risk, PTSD, and resilience
277 following trauma exposure. *Journal of Traumatic Stress* 20:435-447.
- 278 Yu X, Lau JT, Zhang J, Mak WW, Choi KC, Lui WW, Zhang J, and Chan EY. 2010. Posttraumatic
279 growth and reduced suicidal ideation among adolescents at month 1 after the Sichuan
280 Earthquake. *Journal of affective disorders* 123:327-331.
- 281 Zhang Y, Duan W, Tang X, and Yang Z. 2014a. Can virtues enhance the benefits of expressive writing
282 among healthy Chinese? A pilot study. *Journal of Mental Health* 23:231-235.
- 283 Zhang Y, Yang Z, Duan W, Tang X, Gan F, Wang F, Wang J, Guo P, and Wang Y. 2014b. A
284 preliminary investigation on the relationship between virtues and pathological internet use
285 among Chinese adolescents. *Child and Adolescent Psychiatry and Mental Health* 8:8.
286
287

Table 1 (on next page)

Demographic and Sample Characteristics

Table 1 *Demographic and Sample Characteristics*

2 Table 1

3 *Demographic and Sample Characteristics*

Variables	<i>n</i>	%
Gender		
Male	109	32.06%
Female	231	67.94%
Age		
18-25	69	20.29%
26-35	101	29.71%
36-45	112	32.94%
46 and above	58	17.06%
Education		
Secondary school and below	37	10.88%
Tertiary school	186	54.71%
College	66	19.41%
University and above	51	15.00%
Types of trauma		
Natural disaster	126	37.06%
Sudden, unexpected death of someone close to you	102	30.00%

Life threatening illness or injury	56	16.47%
Fire or explosion	49	14.41%
Transportation accident	33	9.71%

Table 2(on next page)

Descriptive Statistics and Group Differences

Table 2 *Descriptive Statistics and Group Differences*

2 Table 2

3 *Descriptive Statistics and Group Differences*

	Indirect Trauma		Direct Trauma		Direct Trauma		ANOVA	
	Sample ($n = 88$)		without PTSD		with PTSD			
			Sample ($n = 217$)		Sample ($n = 35$)			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>Sig.</i>
Relationship	4.24	.41	4.17	.52	3.93	.51	5.08	.01
Vitality	4.16	.47	4.16	.44	4.02	.37	1.58	.21
Conscientiousness	4.01	.49	3.87	.56	3.89	.49	2.30	.10
PTG	3.34	.62	3.34	.56	3.09	.41	3.11	.05
PTSD	-	-	2.01	.39	3.26	.41	-	-

4

5

6

Table 3(on next page)

Correlations between Virtues and Posttraumatic Growth in Different Subgroups

Table 3 *Correlations between Virtues and Posttraumatic Growth in Different Subgroups*

2 Table 3

3 *Correlations between Virtues and Posttraumatic Growth in Different Subgroups*

	Posttraumatic Growth			
	Total	Indirect Trauma	Direct Trauma	Direct Trauma
	Sample	Sample ($n = 88$)	without PTSD	with PTSD Sample
			Sample ($n = 217$)	($n = 35$)
Relationship	.48**	.44**	.50**	.53**
Vitality	.54**	.56**	.39**	.45**
Conscientiousness	.46**	.49**	.45**	.56**

4 ** $p < .01$.

5

Table 4(on next page)

Regression of Virtues on Posttraumatic Growth in Different Subgroups

Table 4 *Regression of Virtues on Posttraumatic Growth in Different Subgroups*

2 Table 4

3 *Regression of Virtues on Posttraumatic Growth in Different Subgroups*

	Indirect Trauma Sample				Direct Trauma without PTSD Sample				Direct Trauma with PTSD Sample			
	(n = 88)				(n = 217)				(n = 35)			
	<i>R</i> ²	<i>F</i>	<i>Beta</i>	<i>t</i>	<i>R</i> ²	<i>F</i>	<i>Beta</i>	<i>t</i>	<i>R</i> ²	<i>F</i>	<i>Beta</i>	<i>t</i>
	.32	40.05***			.32	50.22***			.31	14.827**		
Relationship			.07	.53			.38	5.98***			.27	1.29
Vitality			.56	6.44***			.07	1.04			.23	1.36
Conscientiousness			.17	1.37			.29	4.54***			.56	3.85**

4 ** $p < .01$; *** $p < .001$

5