

## **Posttraumatic Growth in Trauma Survivors: Meaning Making and Locus of Control**

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*Trauma experiences overwhelm individuals' coping resources, leading to negative mental health outcomes, such as symptoms associated with posttraumatic stress disorder. However, clients who have experienced trauma may also experience positive personal changes, known as posttraumatic growth (PTG). This study examines the predictive nature of meaning presence, the search for meaning, and locus of control (LOC) on PTG in a sample of trauma survivors (N = 221). Regression analyses revealed that both meaning variables, and two elements of LOC (internal LOC and chance) were predictive of PTG, and that an internal LOC moderated the relationship between meaning presence and PTG.*

*Keywords: posttraumatic growth, trauma, meaning, locus of control*

Trauma occurs when a person experiences adverse life events that overwhelm their specific coping resources and, therefore, their ability to cope (Van der Kolk, 2014). Trauma can be caused by physical violence (i.e., child abuse, intimate partner violence, rape or sexual assault), witnessed physical violence (i.e., witnessing a murder or suicide, emergency

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workers exposed to trauma), interpersonal violence, natural disasters, motor vehicle accidents, life-threatening medical conditions, and war (Briere & Scott, 2012). The negative mental health outcomes associated with trauma are numerous, including several diagnoses in The Diagnostic and Statistical Manual of Mental Disorders (5<sup>th</sup> ed.; DSM-5; American Psychiatric Association, 2013). Whereas Posttraumatic Stress Disorder (PTSD) is often first to come to mind, bipolar disorder, borderline personality disorder, depression, and dissociative identity disorder can each be manifestations of past trauma (Van der Kolk, 2014). Additionally, trauma specialists are advocating for the addition of a new diagnosis to the DSM-5 specific to those who have experienced complex trauma, Developmental Trauma Disorder (DTD) (Herman 1992; Van der Kolk, 2014). Although PTSD and DTD involve intrusive symptoms like flashbacks and intrusive thoughts, these resulting diagnoses threaten the client's ability to connect with those around them and nourish the interpersonal relationships crucial to healing from past trauma (Mattocks et al., 2012; Siegel et al., 2015).

However, despite the aforementioned symptoms regularly experienced after trauma, individuals also have the potential to grow from these traumatic experiences (i.e., posttraumatic growth). Posttraumatic growth (PTG) encompasses the psychological improvements and strengths a person develops following times of extreme stress or trauma (Calhoun & Tedeschi, 1998). Further, experiencing PTG has associations with positive mental health outcomes, such as enhanced relationships, new views on life, and shifts in views of oneself (Linley & Joseph, 2004).

### **PTG and Meaning Making**

The core tenet of PTG is the notion that one can find meaning in surviving a traumatic event and that meaning will reframe how the survivor reacts emotionally to their story, thus changing the core life assumptions of that person (Tedeschi & Calhoun, 1996). After a traumatic event, views of self and the world are often challenged and even destroyed (Dekel, Mandl, & Solomon, 2011; Linley & Joseph, 2011; Park & Ai, 2006; Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2012). This can result in a search for meaning to reconcile purpose of existence and new worldviews, which in turn can result in growth

(Dekel et al., 2011; DeZutter et al., 2013; Linley & Joseph, 2011; Park & Ai, 2006; Triplett, et al., 2012). Viktor Frankl's (1985) observations while a prisoner in a Nazi death camp in Auschwitz were the first contributions to the notion of finding meaning in trauma and misfortune as a positive response to an inherently negative experience. Since then, it has been found that when meaning can be found, growth and enhanced life satisfaction can result, transforming suffering (Tedeschi & Calhoun, 1996).

In discussing meaning, a distinction exists between the *search* for meaning and the *presence* of meaning. Presence of meaning indicates a sense of purpose for one's existence and a specific significance due to their purpose (DeZutter, et al., 2013). Search for meaning on the other hand indicates effort to establish meaning of life and suffering (DeZutter, et al., 2013). Meaning presence has positive relationships with growth, optimism, acceptance, life satisfaction, and greater well-being (DeZutter et al., 2013; Grad & Zeligman, 2017; Linley & Joseph, 2011; Zeligman, Varney, Grad, & Huffstead, 2018), but the search for meaning is more negatively correlated to growth (DeZutter et al., 2013; Linley & Joseph, 2011; Zeligman, et al., 2018). However, the search for meaning appears to be an important cognitive process on the path to PTG that should not be overlooked. This search causes significant cognitive effort that deliberately results in reflective rumination, allowing a sense of resolution that allows for new global and self-beliefs (Triplett, et al., 2012). This in turn usually results in a deeper level of meaning than previously held, a greater appreciation of life, and greater satisfaction with life (DeZutter et al., 2013, Linley & Joseph, 2011; Triplett et al., 2012). In addition, the search for meaning allows for the possibility of a new presence of meaning, allowing for a resolution to trauma and suffering (Triplett et al., 2012).

### **PTG and Control**

Most individuals believe they have control over their lives, and that as generally good people bad things will not happen to them (Park & Ai, 2010). Through this perceived control, individuals typically believe that the world is fair, and their lives are moving in a desirable direction (Park & Ai, 2010). Subsequently, a loss of control can lead to both increased PTSD symptoms and PTG (Dekel et al., 2011). The concept of locus of control

(LOC) gives further insight into the relationship that control has with PTG. Individuals with an internal LOC tend to believe that a person can influence the outcomes of their life and mostly have control over what happens to them (Buddelmeyer & Powdthavee, 2015; Huffman, Shrira, Cohen-Fidel, Grossman, & Bodner, 2016; Mikulincer, & Avitzur, 1988). In contrast, individuals with an external LOC believe they do not have control over the outcomes of their life and what happens to them is more up to fate, destiny, or luck (Buddelmeyer & Powdthavee, 2015; Huffman, et al., 2016). Researchers have found that those with an internal LOC have greater post-trauma outcomes, including less PTSD symptoms, and increased resilience, suggesting there may further be ties between LOC and PTG (Böttche, Kuwert, Pietrak, & Knaevelsrud, 2016; Cumming & Swickert, 2010; Huffman, et al., 2016; Karstoft, et al., 2015).

Connections between trauma outcomes and LOC may further stem from where individuals place their energy when attempting to cope. Those with an internal LOC are more likely to put effort into improved functioning and try new coping skills (Zhang, Liu, Jiang, Wu, & Tian, 2014). Zhang and colleagues (2014) also found that individuals with an internal LOC were protected from PTSD symptoms, suggesting that these individuals may have also had greater emotional health before experiencing trauma. Further, individuals with an internal LOC are generally more content with life, and are better at handling life's hardships (Buddelmeyer & Powdthavee, 2015).

Individuals with an external LOC are further more likely to believe they cannot change their situation because an event (including trauma) was outside their control, and therefore may be less likely to seek ways to alleviate their emotional pain (Zhang et al., 2014). Furthermore, an external LOC usually results in higher rates of PTSD and more maladaptive coping (Karstoft et al., 2015; Zhang et al., 2014). For these reasons, LOC variables are regularly explored as moderators in mental health research (e.g., Carter, Mollen, & Smith, 2014; Haine, Ayers, Sandler, Wolchik, & Weyer, 2003; Shelley & Pakenham, 2004). The noted mental health benefits associated with having an internal LOC, paired with individuals with an internal LOC having greater sense of power over their own lives, leads us to believe that an internal LOC may have particular influence on PTG outcomes. Relationships between trauma reactions, coping, and PTSD have been explored

in the context of LOC, yet this research rarely extends into clients' growth after trauma, such as experiencing PTG.

## **Purpose**

Trauma, and the adverse psychological outcomes associated with experiencing a traumatic event, continues to be a widespread, public health concern (Substance Abuse and Mental Health Services Administration, SAMHSA, 2018). Despite the negative symptoms experienced by a number of trauma survivors, however, personal growth (i.e., PTG) can also be achieved following a traumatic event (Tedeschi & Calhoun, 1996). PTG brings additional benefits for clients who experience this outcome, such as increased coping, greater overall well-being, and decreased symptoms of PTSD (Bluvstein, Moravchick, Sheps, Schreiber, & Bloch, 2013; Danhauer et al., 2013).

## **Questions**

Knowing the benefits that accompany this outcome for trauma survivors, researchers have a responsibility to continue exploring variables that predict such an experience. Noting the relationships that exist between meaning, PTG, LOC, and trauma, the present study aimed to answer the following research questions:

- 1) Are locus of control (i.e., internal LOC, chance, and powerful others), and meaning (i.e., meaning presence, and search for meaning) predictive of posttraumatic growth in individuals who have experienced trauma?
- 2) Does an internal locus of control moderate the relationship between meaning and PTG in individuals who have experienced trauma?

## **Methodology**

### **Procedures**

Participants ( $N = 221$ ) were recruited via an online system connected to undergraduate courses at a large urban university in the Southeastern United States. In order to participate, students must be at least 18 years of age, self-identify as a trauma survivor, and able to consent to the research. Students were able to participate in this research in return for research credits that would fulfill course requirements, but were also presented with alternate assignments to ensure participation in the research was voluntary. Prior to beginning the research, participants were shown an informed consent and asked to consent to the research. After consenting, a series of online instruments were presented to participants through Qualtrics. With data collection occurring online, participants had the freedom to complete the research at the computer and location of their choosing, and on their own schedules. The online system at the university which hosted the research ensures student accounts can only take each survey once, guaranteeing each participant is unique.

## Participants

Participants were mostly female ( $n = 147, 66.5\%$ ), with participants also identifying as male ( $n = 72, 32.6\%$ ), and transgender ( $n = 2, .9\%$ ). Participants also identified as heterosexual ( $n = 189, 85.4\%$ ), gay ( $n = 13, 5.9\%$ ), bisexual ( $n = 12, 5.4\%$ ), pan-sexual/omni-sexual ( $n = 6, 2.7\%$ ), and queer ( $n = 1, .6\%$ ). In terms of race, participants were primarily Black ( $n = 92, 41.6\%$ ), followed by White ( $n = 68, 30.8\%$ ), Asian ( $n = 24, 10.9\%$ ), Hispanic ( $n = 14, 6.3\%$ ), Biracial/Multiracial ( $n = 12, 5.4\%$ ), Middle Eastern ( $n = 6, 2.7\%$ ), and a race other than those listed ( $n = 5, 2.3\%$ ). The sample was predominantly Christian ( $n = 120, 54.3\%$ ), with participants also identifying as spiritual but not religious ( $n = 30, 13.6\%$ ), Agnostic ( $n = 22, 9.9\%$ ), Atheist ( $n = 15, 6.8\%$ ), Muslim ( $n = 10, 4.5\%$ ), Hindu ( $n = 6, 2.7\%$ ), Jewish ( $n = 4, 1.8\%$ ), Wiccan/Pagan ( $n = 1, 0.5\%$ ), and a religion other than those listed ( $n = 13, 5.9\%$ ). The majority of participants ( $n = 126, 57\%$ ) were also between the ages of 20 and 24, and in their fourth year of college ( $n = 94, 42.5\%$ ).

## Measures

**Posttraumatic Growth Inventory (PTGI).** The PTGI is a 21-item scale used to measure growth following a highly stressful or traumatic life event. The scale measures growth over five factors: (a) relating to others, (b) new possibilities, (c) personal strength, (d) spiritual change, and (e) appreciation of life. Items utilize a six point Likert scale response, ranging from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced a very great degree of change as a result of my crisis*). Sample items include “I changed my priorities about what is important in life” and “I know I can better handle difficulties”. Concurrent validity for the PTGI has been demonstrated through its relationships with similar constructs, such as resilience and hardiness (Tedeschi & Calhoun, 1996). Further, the scale has shown strong reliability when used with similar trauma samples (i.e.,  $\alpha = .97$ , Zeligman, Bialo, Brack, & Kearney, 2016). Internal consistency for the present sample was .95.

**Brief Locus of Control Scale.** The Brief Locus-of-Control Scale (Sapp, & Harrod, 1993) is a 9-item scale developed from the 24-item scale of the same construct (Levenson, 1974). The scale measures LOC over three dimensions: internal, chance, and powerful others. The higher the score a participant has on this scale, the greater they perceive internal control, the less they perceive things happen by chance, and the less they perceive their dependence on powerful others (Sapp & Harrod, 1993). Items rely on a 7-point Likert scale response, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include, “my life is determined by my own actions”, and “to a great extent my life is controlled by accidental happenings.” A path model specifying the dimensions of the instrument on perceived risk proved an appropriate fit, suggesting the scale has satisfactory construct validity. When used with similar college samples, reliability coefficients for each of the factors were .82 (internal), .76 (chance), and .88 (powerful others) (Thrasher, Andrew, & Mahony, 2011). Reliability coefficients within the present study were .72 (internal), .76 (chance), and .83 (powerful others).

**Meaning in Life Questionnaire.** The Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006) measures meaning through two subscales: meaning presence, and search for meaning. The scale contains 10-items utilizing a 7-point Likert-type scale

ranging from 1 (*absolutely untrue*) to 7 (*absolutely true*). Sample items include “my life has a clear sense of purpose” (meaning presence), and “I am seeking a purpose or mission for my life” (search for meaning). The scale has shown good convergent validity, with the search for meaning subscale demonstrating strong positive correlations with sadness, fear, and depression (Steger et al., 2006). Further, confirmatory factor analysis indicated that this two-factor model was an appropriate fit. Scores on the scale have shown strong reliability (e.g.,  $\alpha = .75$ , meaning presence;  $\alpha = .82$ , search for meaning) in samples looking at the experiences of young adults (Işık & Üzbe, 2015). In the present sample,  $\alpha = .83$  (meaning presence) and  $\alpha = .90$  (search for meaning).

## Results

We completed Pearson’s correlations to explore associations between locus of control, meaning making, and PTG. Intercorrelations, means, and standard deviations from these measures are presented in Table 1. PTG showed significant, positive correlations with internal LOC, as well as both meaning scales. Consistent with previous research, the presence of meaning also had a significant positive relationship with an internal LOC. Similarly, the search for meaning also had a significant positive relationship with an internal LOC. Meaning presence further showed significant relationships with other elements of LOC (i.e., chance and powerful others), but these relationships had a negative direction.

Scores on the PTGI indicate that participants were able to experience a moderate amount of growth following their trauma experiences. Out of the 222 trauma survivors who participated, 219 (98.6%) reported experiencing some extent of growth following their trauma, as evidenced by having scores greater than one on the PTGI. The mean PTGI score of the sample ( $M = 63.18$ ,  $SD = 24.66$ ) was also consistent with previous research exploring University samples (e.g.,  $M = 74.29$ , Sheline & Rosén, 2017;  $M = 64.24$ , Shuwiekh, Kira, & Ashby, 2017). Also consistent with PTG research, women in the sample ( $M = 66.01$ ) showed significantly higher growth,  $t(217) = -2.24$ ,  $p = .03$ , than male participants ( $M = 58.15$ ).

Table 1

*Descriptive Statistics and Bivariate Correlations (N = 222)*

Variables	1	2	3	4	5	6
1. PTG	—					
2. Internal	.155*	—				
3. Chance	.120	-.083	—			
4. PO	.003	-.118	.629**	—		
5. Presence	.301**	.503**	-.253**	-.265**	—	
6. Search	.142*	.208**	.199**	.102	-.060	—
Mean	63.18	15.30	9.60	8.96	24.10	24.46
SD	24.66	3.44	4.11	4.51	6.34	6.98
Range	0-105	6-21	3-21	3-21	5-35	5-35

*Note.* \*\* $p < .01$ , \* $p < .05$ . *Internal = LOC subscale, Chance = LOC subscale, PO = LOC subscale, powerful others, Presence = meaning presence, Search = meaning search.*

### **Predictors of PTG**

Prior to interpreting the predictive nature of each of the variables, assumptions of homogeneity of variance, independence of residuals, linearity, normality, and multicollinearity were assessed, and no concerns were found. In line with our first research question, multiple regression analysis was used to test if LOC and meaning were predictive of perceived PTG in the sample. The results indicated that two control variables (i.e., internal LOC, and LOC chance) contributed significantly ( $p < .05$ ) to a model predicting PTG. Together, these two LOC variables explained 4.2% of the variance in PTG scores ( $R^2 = .04$ ,  $F(2, 221) = 4.81$ ,  $p = .009$ ). In addition, an internal LOC was found to make a slightly larger unique contribution ( $\beta = .17$ ,  $p = .01$ ) than chance ( $\beta = .13$ ,  $p = .04$ ) in predicting PTG.

In further exploring the data, we also explored whether meaning variables (meaning presence and meaning search) added to this model of PTG. Both meaning presence and meaning search significantly predicted PTG within the sample, and when combined with

internal LOC and LOC chance, explained nearly 15% of the variance in PTG ( $R^2 = .149$ ,  $F(4, 221) = 9.52$ ,  $p < .001$ ). Both these models of PTG can be found in Table 2.

Table 2

*Results from Regression Analyses Examining Control and Meaning Variables on PTG*

Variable	$\beta$	$t$	$R^2$	$F$	$p$
<i>Model 1</i>			.04	4.81	.01
Chance	.13*	2.02			
Internal	.17**	2.51			
<i>Model 2</i>			.15	9.52	.00
Chance	.40**	2.81			
Internal	-.05	-0.66			
Presence	.38**	5.05			
Search	.14*	2.09			

*Note.* \*\* $p < .01$ , \* $p < .05$ . Internal = LOC subscale, Chance = LOC subscale, Presence = meaning presence, Search = meaning search.

### **Moderation Analysis**

Our final research question asked whether an internal LOC ( $M$ ) would moderate the relationship between meaning presence ( $X$ ) and perceived PTG ( $Y$ ) in those who identified as trauma survivors. We answered this research question by conducting a moderator analysis using the PROCESS macro for SPSS 24.0 (Hayes, 2013). Within this program, model 1 was used, representing the simple moderation of the research question. An internal LOC *did* significantly moderate the relationship between meaning presence and PTG ( $b = -.16$ ,  $t = -2.32$ ,  $p = .02$ ). Results from this analysis are presented in Table 3.

Trauma survivors who reported lower levels of internal LOC reported a significantly larger effect of meaning presence on PTG when compared to those with average and high internal LOC. Similarly, trauma survivors who reported an average level of internal LOC reported a significantly greater effect of meaning presence on PTG when compared to those who reported high internal LOC. Thus, the less internal LOC participants reported, the larger the effect that meaning presence played in perceived PTG.

Table 3

*Results from Moderation Analysis Examining the Effect of Meaning Presence (X) on Perceived PTG (Y) by an internal LOC (M).*

	<i>Coeff</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	-23.67	26.23	-.903	.368
Meaning Presence (X)	3.54	1.06	3.33	.001
Internal LOC	4.09	1.82	2.24	.026
Moderation (X x M)	-0.16	0.69	-2.32	.021
$R^2 = .11, MSE = 546.75$				
$F(3, 218) = 9.24, p < .001$				

*Note.* Meaning presence and internal LOC were mean-centered prior to analysis.

### Discussion

This study explored relationships between PTG, LOC, and meaning, in trauma survivors. Results point to a number of ways professional counselors can better understand PTG in trauma survivors, as well as ways to better support such an outcome with clients who have experienced trauma. The results of this study revealed a sample mean PTG score of 63.18, suggesting growth was seen in this sample of trauma survivors, and that PTG scores were equal or slightly lower than scores seen in similar samples of trauma exposed college students (Borowa, Robitschek, Harmon, & Shigemoto, 2016; Sheline & Rosén, 2017). The presence of PTG within the sample is consistent with an array of previous trauma research (e.g., Borowa et al., 2016; Kim & Oh, 2018), which suggests growth is possible even after difficult life experiences. Substantial research exists documenting the negative sequela that may follow a trauma experience (e.g., Badour, Resnick, & Kilpatrick, 2017; Weiss, Tull, Sullivan, Dixon-Gordon, & Gratz, 2016), but these results add to the growing body of literature suggesting an alternative experience also exists for clients who have survived trauma.

When looking at relationships present within the data, significant, positive correlations existed between PTG and internal LOC, as well as PTG and both meaning variables (i.e., meaning making, and the search for meaning). Despite these significant

correlations, PTG did not hold significant correlations with the other LOC elements: chance or powerful others. PTG's relationship with an internal LOC is consistent with previous research noting the potential mental health benefits of an internal LOC. Internal LOC being the strongest LOC predictor of PTG further supports previous research highlighting the emotional benefits of holding an internal LOC. Previous research has suggested relationships between an internal LOC and other post-trauma outcomes, such as fewer PTSD symptoms, and heightened resilience (Böttche et al., 2016; Cumming & Swickert, 2010; Huffman, et al., 2016; Karstoft, et al., 2015). The present study brings new dimension to these post-trauma outcomes associated with an internal LOC, by adding that an internal LOC may actually be predictive of PTG as well.

Meaning variables (i.e., meaning search and meaning making) have previously been found to be strong predictors of PTG in similar samples (e.g., Grad & Zeligman, 2017; Linley & Joseph, 2011; Zeligman et al., 2018), and the present study only adds strength to these previous findings. In contrast to previous studies, however, the present study found that both the presence of meaning, and search for meaning held positive significant relationships with PTG. Previous research has suggested that an already established presence of meaning (i.e., trauma survivors have already made meaning from their suffering, and are no longer searching to understand the trauma they experienced) may be associated with growth (Dezutter et al., 2013). However, individuals still striving to search for meaning may actually have negative relationships with growth (Dezutter et al., 2013; Linley & Joseph, 2011; Zeligman, et al., 2018). This contrast with the current findings supports the idea that searching for meaning holds an important cognitive role in eventually finding meaning, and could further play a role in the eventual experience of PTG.

Last, we explored if LOC served as a moderator between meaning and PTG. In our sample, an internal LOC significantly moderated the relationship between meaning presence and PTG. In other words, the effect of meaning presence on ones perceived experience of PTG is tied to their level of internalized LOC. Said differently; level of internal LOC affects the strength of the relationship between meaning presence and PTG. Given the strong empirical support of meaning presence serving as a predictor of PTG, internal LOC successfully moderating this connection brings important insight into this relationship. Findings further indicate that the less internal LOC participants reported, the

larger effect meaning presence played on their perceived PTG. Thus, clients with a stronger internal LOC may be better able to reach PTG, regardless of any meaning they have yet been able to assign to their trauma experiences.

### **Counseling Implications**

The results of this study provide information on how professional counselors can better work with clients who have experienced trauma. First, it is important that counselors be aware of the concept of PTG, and see it as a realistic outcome for their trauma clients. In addition to working towards alleviating trauma clients' feelings of distress and pain, with a knowledge of PTG, professional counselors can also work towards facilitating PTG in their trauma survivor clients (Joseph & Linley, 2006). It is worth noting that facilitating PTG in trauma clients does not preclude symptoms of traumatic stress, but rather both experiences (posttraumatic stress and PTG) can exist simultaneously (Zeligman, Bialo, Brack, & Kearney, 2016). In facilitating such an experience, professional counselors might work to explore meaning in a client's life, including meaning that may exist from trauma.

Meaning making is often brought about through social interactions- making the interpersonal connection between client and counselor a unique opportunity to connect, process, and explore the topic of meaning. More specifically, counselors might further help support social interactions with their clients, and therefore promote PTG, through encouraging self-disclosure, and facilitating support groups (LeBarre & Riding-Malon, 2017; Levi-Belz, 2019). A safe space to connect with fellow trauma survivors (i.e., support, processing, or psychoeducational counseling groups) may be even more important in the facilitation of PTG in trauma survivors, as feelings of relatedness can help to facilitate growth, and promote healthy coping (Yeung, Lu, Wong, & Huynh, 2016).

Given the role an internal LOC has in experiencing PTG, as well as a number of other mental health benefits, professional counselors must consider clients' perceptions of control when attempting to case conceptualize trauma clients. In fully understanding a client's worldview, and including their perceptions of control, counselors should consider how clients take responsibility in their lives, as well as how they perceive obstacles and stressors. It is further worth noting that LOC can be impacted by cultural factors, including

age and race (Radcliff, Ghriwati, Derlan, Velazquez, & Halfond, 2018). These differences may be impacted by religion, as people of color and older adults are often more likely to acknowledge external control through a higher power (Lachman, 1986). Paradoxically, turning power over to God may also enable individuals to increase their internal LOC, suggesting religion and spirituality may have a role in assisting individuals to maintain control in their lives (Fiori, Brown, Cortina, & Antonucci, 2006). In fully gaining benefits associated with an internal LOC, professional counselors might also work with trauma clients to develop their own internal LOC.

With trauma survivors already often experiencing feelings of a loss of control, counselors might first work to increase client perceptions of control, rather than any tangible control over circumstances. Self-perception of control in itself may help trauma survivors to cope with trauma, including intrusion symptoms (Tedeschi & Calhoun, 1995). Acceptance-based behavioral therapy (see Roemer & Orsillo, 2009 for details on this treatment approach) may have a role in increasing perceived client control, as well as helping with emotional regulation, and decreasing client distress (Teanor, Erisman, Salters-Pedneault, Roemer, & Orsillo, 2011). Cognitive-behavioral techniques, including shifting negative self-talk, dysfunctional cognitions, and self-blame might have a place in beginning to shift client's LOC to an internal space (Böttche et al., 2016). Clients with lower PTG and lower internal LOC may be particularly in need of trauma-focused cognitive-behavioral therapy, although clients with higher PTG and a greater internal LOC may see faster benefits (Kleim et al., 2013).

### **Limitations and Directions for Future Research**

There are some limitations to consider when interpreting the results of this study. Data was collected from one southeastern university, which limits the generalizability of the results. Although this sample was diverse in terms of race, there are other cultural identities that may not be fully represented in this sample, further affecting the studies generalizability. Future studies might pull a more diverse sample by expanding data collection geographically, and including participants outside of a university setting. With this study being one of the first of its kind including these variables, future studies might

also look at more specific samples, including samples experiencing a shared trauma type, or specifically looking at the experiences of certain cultural groups (e.g., women, participants of color).

This study also relied on cross-sectional data, which limits us from fully exploring anything outside of relationships. Future research that employs more longitudinal approaches would provide more meaningful results, and demonstrate how PTG may change over time in relation to these variables. Last, this study utilized self-report measures, which means the sample may have been influenced by social desirability- or participants answering items in a way they felt made them seem more favorable to the research team. Although this survey approach is common in research, future research could also employ perceptions from friends, family members, and observations, to gain additional insight into participants' levels of PTG, LOC, or meaning.

### **Conclusion**

This study serves as one of the first exploring relationships between PTG, LOC, and meaning in trauma survivors. Results support that PTG is a possible outcome for those who have experienced trauma, and that such an outcome has a relationship with meaning aspects, both meaning making and the search for meaning, as well as an internal LOC. Findings also suggest that an internal LOC moderates the relationship between meaning presence and PTG. With these findings in mind, professional counselors have an opportunity to facilitate personal growth in their trauma clients. Professional counselors might work towards this by exploring topics of meaning, as well as increasing clients' self-perceptions of control in their lives.

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