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A Dual-Factor Model of Posttraumatic Responses: Which Is Better, High Posttraumatic Growth or Low Symptoms?

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Objective: Experiencing traumatic events may invoke posttraumatic symptoms (PTS) or growth (PTG). Using a dual-factor approach inspired by the dual-factor model of mental health, we explore the intersections of posttraumatic symptoms and growth with 21 strengths and indicators of psychological, physical, and spiritual well-being. ***Method:*** A survey completed by 1,966 participants who had experienced at least one prior victimization (average age 29.8 [*SD* = 1.64]; 63.6% female) assessed strengths, outcomes, and victimization. Participants were classified into four posttraumatic groups: Resilient (low symptoms, high growth, 23.9%), Prevailed (high symptoms, high growth, 26.1% of sample), Detached (low symptoms, low growth, 20.3%), and Distressed (high symptoms, low growth, 29.8%). ***Results:*** Analyses of covariance (ANCOVAs) controlling for age, gender, and victimization found that posttraumatic group classification was associated with each regulatory, meaning-making, and interpersonal strength, and every well-being measure. The Distressed group scored the lowest and the Resilient group scored the highest on almost all measures. Notably, the Prevailed group scored above the Detached group on most measures, except for health-related quality of life and optimism, suggesting that high growth may be more beneficial than low symptoms when coping with trauma. ***Conclusions:*** Findings suggest that coping after trauma is more complex than merely doing well or doing poorly in response to trauma. Promoting posttraumatic growth may help even highly symptomatic people achieve well-being after trauma.

Clinical Impact Statement
Promoting posttraumatic growth may be more important for supporting well-being after trauma than reducing posttraumatic symptoms.

Keywords: posttraumatic symptoms, posttraumatic growth, resilience, psychological well-being, victimization

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Victimizations and other traumatic events, that is, events leading to threats or actual harm and injury, humiliating and shaming, or witnessing harm to others (Comas-Díaz et al., 2019), constitute a major public health issue (Sethi et al., 2013). These victimization experiences can lead to a wide range of negative mental health consequences including posttraumatic symptoms (PTS; meta-

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Although other articles have been published from this dataset, this is the only one to focus on posttraumatic profiles and the relationships examined in the present article have not been examined in any previous or current articles.

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analysis, Haahr-Pedersen et al., 2020), but can also be associated with positive changes called posttraumatic growth (PTG; Brooks et al., 2019; Tedeschi & Calhoun, 2004). To date, several studies have noted the dynamic and complex interplay between PTS and PTG, with mixed findings about the nature of the relationship (e.g., see Shakespeare-Finch & Lurie-Beck, 2014; Whealin et al., 2020). Inspired by the dual-factor model of mental health, the current study adopts a dual-factor approach to explore the intersections of posttraumatic symptoms and growth with 21 psychosocial strengths (specific interpersonal, regulatory, and meaning-making strengths) and three aspects of well-being (physical, psychological, and spiritual).

Posttraumatic Symptoms

Although most individuals who experience traumatic events are resilient (Bonanno, 2004; Southwick & Charney, 2018), *posttraumatic symptoms* are also common responses (American Psychiatric Association, 2013; Bryant, 2019), including reexperiencing the traumatic event (e.g., flashbacks, intrusive memories, nightmares), dissociation, avoiding trauma-related stimuli, negative thoughts and feelings worsened by the trauma (including emotional numbing), and/or increased arousal (e.g., hypervigilance, aggression). Estimates for lifetime rates of PTSD have ranged from 1% to 67% in varying samples (e.g., Alisic et al., 2014; Goldstein et al., 2016; Koenen et al., 2017), with a meta-analysis producing an estimate of one in six among trauma-exposed youth (Alisic et al., 2014). Another meta-analysis estimated the population prevalence of subsyndromal PTSD symptoms at 14.7% (Brancu et al., 2016).

Posttraumatic Growth

In contrast to PTS, a burgeoning body of research has shown that many individuals report some positive changes following traumatic experiences, a phenomenon known as *posttraumatic growth* (PTG) (Tedeschi & Calhoun, 1996; Zoellner & Maercker, 2006). Tedeschi and Calhoun identified five domains in which positive change tends to occur after trauma: (a) increased appreciation of life; (b) stronger or more meaningful relationships with others; (c) spiritual or existential changes; (d) an increased sense of personal strength; and (e) openness to new possibilities (Tedeschi & Calhoun, 1996; Tedeschi et al., 2017, 2018; Tsai et al., 2016). Recent reviews found that PTG is the norm, not the exception, with most survivors experiencing growth in at least one domain and half reporting moderate-to-high PTG (Elderton et al., 2017; Wu et al., 2019).

The Relationship Between Posttraumatic Symptoms and Posttraumatic Growth

Previous research has considered the relationship between posttraumatic symptoms and posttraumatic growth, but there is little agreement about the nature of this relationship. Some studies have found, counterintuitively, a positive correlation between PTG and PTS (e.g., Dekel et al., 2012), while others have found an inverse correlation (e.g., Stermac et al., 2014), or no correlation (e.g., Salsman et al., 2009). One meta-analysis found both a positive correlation and a curvilinear relationship (Shakespeare-Finch & Lurie-Beck, 2014). At present, there is not a consensus regarding the relationship, but two prominent explanations are (a) that some degree of self-reported PTG is illusory, and (b) that traumatic stress is the "engine" of PTG. Suggested by Taylor et al. (2000), "illusory growth" refers to trauma survivors' positive but mistaken beliefs about the benefits of trauma. Some researchers theorize that perceived PTG functions as defensive coping or a means to avoid processing the traumatic event (Dekel et al., 2012; Tiamiyu et al., 2016). This may be helpful in the short term to maintain psychological equilibrium (Affleck & Tennen, 1996), but long-term avoidance is a central and often impairing PTSD symptom (American Psychiatric Association, 2013).

In contrast, some scholars suggest that little growth will occur if the traumatic experience is not "impactful," but that a great deal of stress is so impairing that positive outcomes are impeded (Joseph et al., 2012; Tedeschi & Calhoun, 2004; Tedeschi et al., 2018). In this idea, PTS is the "engine" of PTG (Joseph et al., 2012). However, in this model, it is not always clear to what extent they are talking about "impactful" in terms of the severity of the traumatic event or impactful in terms of the severity of the symptoms. Park's model of meaning making and adjustment after trauma also points to PTS as part of the process that results in PTG (Park & Ai, 2006; Park et al., 2017). In Park's model, individuals who have negative beliefs resulting from trauma remain distressed until they find meaning and purpose in life. Once they make sense of the traumatic event and find purpose in spite of it, survivors will find they have changed for the better, that is, experienced posttraumatic growth (Park & Ai, 2006; Van Tongeren et al., 2020; Weathers et al., 2016). In this way, it is not posttraumatic symptoms themselves, but rather the recovery process that facilitates PTG (Park et al., 2017).

In addition to a lack of consensus about the relationship between PTS and PTG, most past research has been limited by trying to identify a single correlation or pattern for a population, rather than exploring individual differences. Some of the foregoing hypotheses could be clarified by a broader lens that incorporates other measures of strengths and functioning. For example, if self-reported PTG is illusory and not representative of any real positive changes, it is unlikely to co-occur with self-reported well-being.

Dual-Factor Approaches to Psychological Health

To shed some light on these issues, we adapt a framework first developed for mental health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). The dual-factor model of mental health has shown that psychopathology and well-being are not simply opposite poles of a single continuum. Scholars in this field have called for an integration of these constructs and a greater, more balanced consideration of positive and negative outcomes (Greenspoon & Saklofske, 2001). Unlike approaches that look for average relationships across a sample or population, the dual-factor model creates a conceptual framework for exploring individual differences in patterns. For example, individuals could be high in well-being while also reporting high levels of symptoms, or low in psychopathology and yet also low in well-being. Further, individuals with mixed profiles are different from those with consistent scores on many other characteristics (Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). Recognizing these mixed patterns has contributed to a more nuanced understanding of mental health. The dual-factor approach has also recently been extended to social support seeking and receiving (Hamby et al., 2020a). A dual-factor model of posttraumatic responses has the

potential to clarify the relationship between PTS and PTG. With a dual-factor model comes a recognition that these outcomes are conceptually distinct and therefore can coexist in various ways.

Strengths and Outcomes in the Resilience Portfolio Model

The Resilience Portfolio Model (Grych et al., 2015) identifies multiple psychosocial strengths that promote health and well-being, even in the presence of significant trauma. The model groups strengths into three categories: regulatory (emotion and behavior management), interpersonal (positive relationships), and meaning making (connecting to something larger than oneself). The resilience portfolio model also calls for assessing a range of outcomes, including psychological well-being, spiritual well-being, and physical well-being (Hamby, Taylor, et al., 2018). Some of these categories and/or the combination of strengths (poly-strengths) have shown inverse correlations with PTS and positive correlations with PTG (e.g., Hamby, Grych, & Banyard, 2018; Hamby et al., 2020b; Moisan et al., 2019). Several studies have explored the association of various strengths with PTG (Acquaye, 2017; Eren-Koçak & Kiliç, 2014; Frazier et al., 2004; Khursheed & Shahnawaz, 2020; Orejuela-Dávila et al., 2019; Song, 2012; Yeung & Lu, 2018). However, none of these have adopted a dual-factor approach nor included as wide a range of psychosocial strengths.

The Present Study

Inspired by the dual-factor model of mental health (Antaramian et al., 2010), the current study explored the intersections of posttraumatic symptoms and growth with 21 psychosocial strengths (in three domains, regulatory, meaning making, and interpersonal) and psychological, spiritual and physical well-being (after controlling for victimization, age, and gender) in a large community sample. For the posttraumatic dual-factor model, we grouped trauma survivors by their combination of both PTG and PTS, resulting in four profiles: 1) *Resilient* survivors who have low PTS and high PTG; 2) *Prevailed* survivors who have high PTS and high PTG; 3) *Detached* survivors who have low PTS and low PTG; and 4) *Distressed* survivors who have high PTS and low PTG. We predicted that being low on PTS and high on PTG (Resilient) would be associated with higher scores on measures of functioning and other psychosocial strengths, consistent with prior research and the Resilience Portfolio Model, while being high on PTS and low on PTG (Distressed) would be associated with lower scores on indicators of strengths and well-being. Given the dearth of previous research on mixed profiles, we explored the associations of the two mixed profiles (Prevailed and Detached) with indicators of strengths and well-being.

Method

Participants

Participants were 1,966 individuals from predominantly small town and rural areas in the southern United States, who were a subsample of a larger community sample (N = 2,565). For this study, we focused on participants who experienced at least one prior victimization. The sample was 63.6% female and had an average age of 29.8 years (SD = 1.64; distributed as follows: 12–14 years = 7.5%, 15–17 = 11.9%, 18–29 = 35.9%, 30–39 = 20.2%, 40+ = 24.4%). In terms of race and ethnicity, 76.7% of the sample identified as European American/White, 10.9% as African American/Black, 5.7% Latino/a (any race), 4.6% multiracial, 1.1% American Indian/Alaska Native, and 1.0% Asian or Pacific Islander.

Regarding education, 32.4% held either a high school diploma or GED, 19.8% had some college with no degree, 22% had an associate degree or higher, 18.7% were currently in middle or high school, and 7.1% did not finish high school. Income was reported in three categories: 37.8% reported total household income of $20,000 or less per year, 36.3% reported earning $20,000 to $50,000 a year, and 25.8% reported earning more than $50,000 a year. Most of the sample (65.9%) lived in small towns with a population of 2,500 to 20,000 people, 20.5% lived in rural areas with populations under 2,500, and the rest (13.6%) lived in more populous areas.

Procedure

Participants were recruited through a range of advertising techniques in 2013 and 2014. The range of techniques was used to reach segments of the population who are not often sampled in research. Most participants (74.8%) were recruited at local community events, such as festivals and county fairs. Word-of-mouth was the second most productive recruitment strategy that captured another 14.3% of the sample. The remaining 10.5% of the sample were recruited through other strategies, such as flyers, newspaper and radio ads, and direct mail. The survey was self-administered using SNAP10 software on laptops and iPads. An audio option was available. Overall, the completion rate was 85% (technical issues prevented some participants from completing the survey) and the median completion time was 53 minutes. This is an excellent completion rate by current survey standards, especially considering the length, with current completion rates often below 70% (Abt SRBI, 2012) and sometimes below 50% (Galesic & Bosnjak, 2009). All participants gave informed consent; for minors, parents gave consent and youth assent. Participants received a $30 Walmart gift card and information for local resources. All procedures were approved by the IRB of the host institution.

Measures

Development and Validation of Measures

Given that our sample included a significant number of participants with limited educational attainment, it was essential that the reading level be appropriate for all. Brevity was also a priority. See Hamby, Grych, & Banyard (2018) for details on the measurement development process and reliability and validity for all measures. All items can be found at https://www.lifepathsresearch.org/strengths-measures/. Unless specified, response categories for each measure were on a 4-point Likert scale with 1 denoting *not true about me* and 4 denoting *mostly true about me*. Missing data were low, averaging 2.6% and were imputed using mean imputation based on responses to other items on the same scale. In all cases, except trauma symptoms, higher scores represent higher levels of

strengths, psychological functioning, and adversity. For trauma symptoms, higher scores indicate experiencing more trauma.

Posttraumatic Growth

Posttraumatic growth is measured by nine items (α = .89) adapted from the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) on increased self-awareness and appreciation of life following adversity (referencing the most stressful event in the last year). A sample item is "I changed my priorities about what is important in life."

Trauma Symptoms

Trauma symptoms are measured by 10 psychological symptoms (α = .90) adapted from the Trauma Symptoms Checklist-Youth (Briere, 1996) assessed on a 4-point scale ranging from *never* to *almost all the time*. A sample item is "Feeling lonely in the last month." This brief version has shown good reliability and validity for adults and youth in other samples (Hamby, Blount, et al., 2018; Hamby et al., 2020b) and allowed us to use a single measure for the entire sample. Scores on this measure represent a range of symptoms, including those below threshold for diagnosis.

Scores from the posttraumatic growth and trauma symptoms were used to create four posttraumatic profiles, using a median split for both scales (up to and including the 50th percentile = 0, over 50th percentile = 1). The groups incorporate individuals' level of posttraumatic growth and reported symptoms. The Resilient group scored low on trauma symptoms and high on growth. The Prevailed group scored high on trauma symptoms and high on growth. The Detached group scored low on trauma symptoms and low on growth. Lastly, the Distressed group scored high on trauma symptoms and low on growth. See Table 1 for a depiction of these groups and the percentages in each.

Regulatory Strengths

Regulatory strengths assess aspects of emotion and behavior control (see Hamby, Grych, & Banyard, 2018 for more details and https://www.lifepathsresearch.org/strengths-measures/ for all strengths measures). Emotion Regulation is comprised of four items (α = .81) assessing one's ability to manage distressing feelings. Emotion Awareness was assessed with two items (α = .80) on the ability to monitor one's own feelings. The Psychological Endurance Scale uses six items (α = .85) to assess one's ability to persevere despite challenges. The Coping Scale uses 13 items (α = .89) to assess behavioral and cognitive-emotional responses for dealing with adversity.

Meaning-Making Strengths

Meaning-making strengths assess ways in which individuals seek spiritual and personal fulfillment (again, see Hamby, Grych, & Banyard, 2018 for more measurement information). The Purpose scale includes three items (α = .82) that assess perceptions that there is a reason for existence. Optimism is assessed with two items (α = .82) that measure positive expectancies. The Meaning Making Questionnaire includes four subscales. Relationship-oriented Meaning Making includes 10 items (α = .86) on how individuals help others to make their own lives meaningful. Self-oriented Meaning Making comprises eight items (α = .76) on improving one's mental and physical well-being. Moral Meaning Making is assessed with four items (α = .79) that gauge adherence to standards of beliefs and behaviors in respondents' daily lives. Family Care Meaning Making is comprised of five items (α = .75) measuring caregiving and work on strengthening family ties. The Religious Meaning Making Scale consists of 11 items (α = .90) that assesses engagement in religious and spiritual practices.

Interpersonal Strengths

Interpersonal strengths include relational skills and indicators of support from participants' larger social environment (details in Hamby, Grych, & Banyard, 2018). Community Support comprises nine items (α = .86) that assess the degree to which one's neighbors get along and help one another. Compassion uses seven items (α = .75) to assess how one engages with others in a caring, concerned, and helpful way. Maternal Attachment comprises six behavioral indicators (α = .93) of a close and secure relationship with one's mother or mother figure, adapted from the Attachment Behaviors Scale. Paternal Attachment contains six parallel items (α = .94) that ask about one's father or father figure. Forgiveness comprises three items (α = .62) assessing one's ability to move on following an argument. For Generativity, five items (α = .87)

Table 1
Two-Factor Model of Posttraumatic Symptoms by Growth With Percentage in Each Group in This Sample

	Posttraumatic growth	
Posttraumatic symptoms	Low growth	High growth
Low symptoms	Detached 20% *n* = 399 PTS *M* = 1.51 (*SD* .27) PTG *M* = 2.65 (*SD* .54)	Resilient 24% *n* = 469 PTS *M* = 1.50 (*SD* .27) PTG *M* = 3.73 (*SD* .25)
High symptoms	Distressed 30% *n* = 585 PTS *M* = 2.80 (*SD* .56) PTG *M* = 2.55 (*SD* .59)	Prevailed 26% *n* = 513 PTS *M* = 2.68 (*SD* .52) PTG *M* = 3.68 (*SD* .27)

Note. *n* = 1,966. *M* = mean; *SD* = standard deviation; PTS = posttraumatic symptoms; PTG = posttraumatic growth. Provided means and standard deviations are unstandardized.

measured one's concern for guiding future generations. Social Support—Immediate Family comprises six items (α = .86) that assess the extent to which individuals' family members serve as sources of strength and guidance. Social Support—Friends and Adults contains six items (α = .89) measuring the extent to which individuals' friends and nonparent adults serve as sources of strength and guidance. Generous Behaviors are assessed with six dichotomous items (α = .64) that measures last year giving activities. The Generative Roles scale contains nine dichotomous items (α = .74) assessing specific roles through which one has guided and served future generations.

Polyvictimization

Polyvictimization comprises 21 items that assess lifetime history of a range of interpersonal victimizations (Hamby, Grych, & Banyard, 2018). Dichotomous items ("yes" or "no") were summed to create a total polyvictimization score (α = .87). The median number of victimizations reported by participants (in this subsample of people who reported at least one victimization) was seven, with a mean of $M = 7.47$ ($SD = 4.70$). More than nine in 10 (93.0%) participants reported two or more forms of victimization.

Measures of Well-Being

Three indicators were examined to assess multiple aspects of well-being (see Hamby et al., 2018). Subjective Well-being was assessed with 13 items (α = .94) that measure a person's perception of how well their life is going. Physical Well-being consists of five items (α = .81) that assess physical health experiences within the past 30 days (5-point scale, *0 days* to *every day*). Spiritual Well-being comprises five items (α = .85) assessing the importance of connection to a higher power in one's life.

Data Analysis

All scale scores were standardized by conversion to Z-scores (mean converted to 0 with a standard deviation of 1) to allow for comparisons across measures. Descriptive statistics were used to characterize the sample. A correlation table of all variables is available in the online supplementary materials. Analyses of covariance (ANCOVAs) were used to examine difference between the four posttraumatic growth groups, Resilient, Prevailed, Detached, and Distressed, followed by posthoc comparisons of means. Age, gender, and polyvictimization were included as covariates (see the online supplementary materials for covariate results). The psychosocial strengths and indicators of current functioning were the dependent variables.

Results

Strengths Among Four Posttraumatic Profiles

After controlling for age, gender, and polyvictimization, ANCOVAs revealed significant differences in all 21 psychosocial strengths among the four posttraumatic groups, Resilient, Prevailed, Detached, and Distressed, with every $p < .001$. In most cases, the Resilient group scored the highest and the Distressed group scored the lowest (see Table 2). In the following, we pay particular attention to the patterns for the two mixed profiles, the Prevailed and Detached groups, as these have been less commonly considered.

Regulatory Strengths

Consistent with the general pattern of findings, all four regulatory strengths varied across the four posttraumatic profiles. Further, the Resilient group was always highest and the Distressed group always lowest. Regarding the mixed profiles, the Prevailed group scored higher than the Detached group for three out of four regulatory strengths, suggesting high PTG is more advantageous than low PTS. The exception was for emotion regulation, which showed higher scores for the Detached than Prevailed group.

In terms of the separation among the groups, all four groups were statistically different from each other (for all paired comparisons, $p < .05$) for endurance and emotion awareness. For coping, the Prevailed group was statistically similar to the Resilient group and the Detached group statistically similar to Distressed. However, for emotion regulation, this pattern for the mixed profiles was reversed—the Detached group was more like the Resilient group, while the Prevailed and Distressed groups were similar to each other and significantly lower than the Resilient and Detached ones.

Meaning Making Strengths

Posttraumatic profiles varied across all seven meaning making strengths, $p < .001$. Also see Table 2. The Resilient group was highest on six of seven meaning making strengths, and the Distressed group was lowest on six of seven. In terms of separation among the groups, sense of purpose and relationship meaning making best distinguished the profiles, with all four groups statistically different from each other (Resilient>Prevailed>Detached>Distressed).

Regarding the mixed profiles, the Prevailed group was higher than the Detached group for six of seven strengths. The Prevailed group was statistically similar to the Resilient group on religious meaning making, moral meaning making, and family care meaning making, and second highest on three others (sense of purpose, relationship meaning making, and self-oriented meaning making). Although the Detached group was higher than the Distressed group for most meaning making strengths (except self-oriented meaning making), it was still significantly lower than the Prevailed group for every strength except optimism.

Optimism showed a pattern unlike the others, with the Detached group unexpectedly scoring highest on optimism, although statistically similar to the Resilient group. Optimism was the only strength for which the Distressed group was not the lowest scoring group, with the Prevailed group instead scoring lowest (albeit statistically similar to each other).

Interpersonal Strengths

Interpersonal strengths showed significant differences among posttraumatic profiles for all 10 interpersonal strengths ($p < .001$). The Distressed group scored lowest on all ten interpersonal strengths and the Resilient group the highest on eight out of 10 (see Table 2). The most separation among the groups was seen for generativity and social support, for which all four groups were different from each other.

Table 2
Means and Standard Errors for Psychosocial Strengths and Outcomes as a Function of Posttraumatic Group

Strength or wellbeing variable	Resilient *M* (*SE*)	Prevailed *M* (*SE*)	Detached *M* (*SE*)	Distressed *M* (*SE*)	*F*	η^2
			Regulatory strengths			
Psychological endurance	.60 (.04)$_a$	.41 (.04)$_b$	−.22 (.04)$_c$	−.58 (.04)$_d$	222.32***	.27
Emotion regulation	.48 (.04)$_a$	−.41 (.04)$_b$	.45 (.04)$_a$	−.46 (.04)$_b$	166.25***	.21
Coping	.50 (.14)$_a$	.42 (.08)$_a$	−.32 (.12)$_b$	−.43 (.08)$_b$	155.61***	.20
Emotion awareness	.39 (.04)$_a$	.24 (.04)$_b$	−.05 (.05)$_c$	−.43 (.04)$_d$	81.85***	.12
			Meaning-making strengths			
Purpose	.60 (.04)$_a$	.27 (.04)$_b$	−.07 (.05)$_c$	−.65 (.04)$_d$	192.06***	.24
Meaning making—Relationship-oriented	.51 (.04)$_a$	.31 (.04)$_b$	−.24 (.05)$_c$	−.46 (.04)$_d$	130.15***	.18
Religious meaning making	.41 (.04)$_a$	.31 (.04)$_a$	−.29 (.05)$_b$	−.47 (.04)$_c$	110.95***	.15
Meaning making—Morals	.37 (.04)$_a$	.31 (.04)$_a$	−.12 (.04)$_b$	−.37 (.04)$_c$	85.59***	.12
Optimism	.33 (.04)$_a$	−.32 (.04)$_b$	.37 (.05)$_a$	−.27 (.04)$_b$	66.56***	.10
Meaning making—Self	.39 (.04)$_a$	.21 (.04)$_b$	−.21 (.05)$_c$	−.33 (.04)$_c$	65.96***	.10
Meaning making—Family care	.22 (.04)$_a$	.12 (.04)$_a$	−.18 (.05)$_b$	−.33 (.04)$_c$	40.73***	.06
			Interpersonal strengths			
Generativity	.56 (.04)$_a$	.41 (.04)$_b$	−.20 (.04)$_c$	−.50 (.04)$_d$	172.01***	.22
Compassion	.37 (.04)$_a$	.31 (.04)$_a$	−.16 (.04)$_b$	−.29 (.04)$_c$	80.31***	.12
Social support—Friends and adults	.41 (.04)$_a$	.26 (.04)$_b$	−.09 (.05)$_c$	−.37 (.04)$_d$	79.53***	.12
Social support—Immediate family	.34 (.04)$_a$	.22 (.04)$_b$	−.10 (.05)$_c$	−.40 (.04)$_d$	69.04***	.10
Forgiveness	.28 (.05)$_a$	.09 (.04)$_b$	.00 (.05)$_b$	−.23 (.04)$_c$	26.64***	.04
Maternal attachment	.19 (.05)$_a$	.19 (.04)$_a$	−.17 (.05)$_b$	−.22 (.04)$_b$	26.29***	.04
Community support	.28 (.05)$_a$	.01 (.04)$_b$	.01 (.05)$_b$	−.25 (.04)$_c$	25.16***	.04
Generative roles	.24 (.05)$_a$	.14 (.04)$_a$	−.12 (.05)$_b$	−.22 (.04)$_b$	23.37***	.04
Paternal attachment	.12 (.05)$_a$	.19 (.04)$_a$	−.11 (.05)$_b$	−.23 (.04)$_b$	20.67***	.03
Generous behaviors	.12 (.05)$_a$	.13 (.04)$_a$	−.16 (.05)$_b$	−.18 (.04)$_b$	14.57***	.02
			Outcome indicators			
Psychological well-being	.63 (.04)$_a$	.23 (.04)$_b$	.04 (.04)$_c$	−.72 (.04)$_d$	232.39***	.28
Spiritual well-being	.50 (.04)$_a$	.37 (.04)$_b$	−.32 (.05)$_c$	−.55 (.04)$_d$	160.49***	.21
Physical well-being	.33 (.04)$_a$	−.13 (.04)$_b$	.31 (.05)$_a$	−.38 (.04)$_c$	65.87***	.10

Note. Means with different subscripts are significantly different from each other; $p < .05$. Means have been converted to z-scores, with higher scores indicating higher levels of each strength or outcome. Means and standard errors are adjusted for age, gender, and victimization history.
*** $p < .001$.

Regarding the mixed profiles, the Prevailed group was again either statistically similar or next highest after the Resilient group. The Prevailed group was next highest but still significantly lower than the Resilient group on generativity, both kinds of social support (familial and nonfamilial), forgiveness, and community support. The Prevailed group was statistically similar to the Resilient group on the other five strengths, including scoring slightly (nonsignificantly) higher on paternal attachment and generous behaviors and obtaining the same score as the Resilient group on maternal attachment. As with other types of strengths, the Detached group was similar to the Distressed group, scoring third lowest of four groups on nine of 10 strengths (and tying with Prevailed for the 10th, community support). The Detached and Distressed groups were statistically similar for generative roles, generous behaviors, and maternal and paternal attachment; Detached was higher than Distressed for all others.

Well-Being for Four Posttraumatic Profiles

The posttraumatic groups differed on all three indicators of well-being, $p < .001$. For psychological and spiritual well-being, all four groups followed the most common pattern seen for the strengths, with the Resilient group reporting highest levels of well-being, followed by Prevailed, Detached, and Distressed. All four groups were also significantly different from each other. However, the pattern varied for physical well-being. Although the Resilient group again had the highest scores on physical well-being, the Detached group was statistically similar to the Resilient group, while the Prevailed group was significantly lower than both of these, and the Distressed group significantly lower than the other three groups. See Table 2.

Discussion

Prior research using the dual-factor model of mental health revealed distinctions not discernible by considering psychopathology or well-being separately (Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). As far as we are aware, this study is the first to use a dual-factor approach to explore the intersections of posttraumatic symptoms and posttraumatic growth. The dual-factor approach identified significant differences among four posttraumatic profiles on 21 psychosocial strengths and three indicators of well-being in a community sample of adolescents and adults with at least one victimization. Not surprisingly and largely as predicted, the Distressed group (low on PTG, high on PTS) scored lowest on all but one strength and all well-being measures. Likewise, the Resilient group (high on PTG, low on PTS) scored highest on most strengths and well-being measures (highest on 21 of 24). The Distressed group scored, on average, .77 standard deviations below the Resilient group.

Psychological endurance, sense of purpose, and generativity were the strengths that best distinguished among the four posttraumatic profiles (each with effect sizes over .20 and all four groups significantly different from each other). The same was also true for psychological and spiritual well-being.

More notably, the two mixed-profile groups could be distinguished from the Resilient and Distressed groups and shed new light on the relationship between PTG and PTS. The Prevailed group (high on PTG and PTS) generally appeared similar to the Resilient group and second highest in functioning. On average across all strengths and functioning measures, the Prevailed group scored .20 standard deviations below the Resilient group. The Detached group (low on PTG and PTS) usually scored lower than the Prevailed group, an average of .46 standard deviations below the Resilient group. These findings suggest that posttraumatic growth may be a more powerful predictor of overall functioning than posttraumatic symptoms, because people scoring high in PTG, even in the presence of high PTS, were overall doing better than people low in PTS when they were also low in PTG.

However, there were some variations in these patterns that also should be noted. There was the most separation among the groups on the indicators of well-being, followed closely by regulatory strengths and then meaning making. In contrast, although there were still significant differences among the groups on interpersonal strengths, these were less marked. The distance from the Resilient group was only .10 standard deviations for the Prevailed group, .40 for Detached, and .58 for Distressed. This is consistent with other Resilience Portfolio model data (Hamby, et al., 2018; Hamby et al., 2020a) suggesting that interpersonal strengths, as assessed, do not contribute to resilience as much as regulatory or meaning making strengths. We believe this calls for new investments in assessing key aspects of the social ecology.

Within the domains, there was some variation too. The Prevailed group looked more like the Distressed group on physical well-being and two strengths, emotion regulation and optimism, while the Detached group was similar to the Resilient group on all three of these indicators. Thus, in these cases, people reporting low symptoms were functioning better than people reporting high PTG. Regarding physical well-being, we think it is possible that both high symptoms and poor physical well-being could be indicators of higher allostatic load, perhaps contributing to regulatory challenges as well (Ellis & Del Giudice, 2014; Rodriquez et al., 2020). Although all these results certainly need further exploration, it is possible that higher growth is a result of finally reckoning with traumatic experiences, and that our measure of optimism could be capturing wishfulness or avoidance of thinking about trauma impact.

This study is consistent with past research showing that PTG and PTS are associated with many other indicators of psychological status (Tedeschi et al., 2018). Further, our data suggest that PTG and PTS are not simply opposites on a single continuum but can occur together and in varying patterns. Considering individual differences in these patterns can help explain the varied findings across previous studies (e.g., Dekel et al., 2012; Salsman et al., 2009; Shakespeare-Finch & Lurie-Beck, 2014; Stermac et al., 2014; Whealin et al., 2020). Our findings of similarly high scores for the Prevailed and Resilient groups on meaning-making strengths suggest that Park's model may be accurately capturing how crucial meaning making is for survivors (Park & Ai, 2006). However, because the Prevailed group was generally lower than the Resilient group for other strengths and for well-being, other factors appear to be involved in reaching the optimal level of posttraumatic functioning (the Resilient group).

Our findings counter suggestions that PTG is an illusory phenomenon (e.g., Taylor et al., 2000), for high PTG, with or without PTS, was consistently linked to a wide range of strengths and indicators of functioning, while low PTS without high PTG (i.e., Detached) was generally associated with lower functioning than the two high PTG groups. The findings that PTG makes a real difference in functioning is also supported by other data on the benefits of meaning making and processing for trauma recovery (Joseph et al., 2012; Park & Ai, 2006). By controlling for polyvictimization in this highly victimized sample, our findings also suggest that PTG is not necessarily driven by the level of trauma. This result is consistent with ours and others' qualitative and clinical work, which supports the idea that virtually everyone can benefit from growth-oriented processing of trauma, regardless of the level of trauma involved (once people are no longer in a dangerous environment).

Strengths and Limitations

This project expands research on posttraumatic responses by jointly considering posttraumatic growth and symptoms, including examining mixed profiles. The project also expands the characteristics that have been studied in relation to posttraumatic responses. Further, the study elucidates experiences of PTG and PTS in predominantly low-income communities in the southern United States. Nonetheless, it would be valuable to replicate these findings in other groups and in other regions of the country and the world. This was a cross-sectional study, which is an appropriate and cost-effective means of exploring new ideas, but the results would benefit from replication in a longitudinal study. No measure is perfect, and it is possible that some of our items may have been less relevant for some respondents. This sample focuses on people who had experienced some form of interpersonal victimization, and it would be useful to replicate these findings for other types of traumatic experiences.

Implications and Conclusion

Like the dual-factor approach to mental health, the dual-factor approach to posttraumatic responses can provide new insights for research, prevention, and intervention. Regarding research, the four posttraumatic profiles could be studied in relation to other strengths, risk factors, or outcomes, to see if they differ on those as well. Future research might also explore whether these four groups respond differently to various therapeutic approaches.

In terms of clinical implications, the current findings suggest some avenues for consideration, especially if replicated. Chief among these is a potential benefit from shifting therapeutic efforts away from reducing symptoms as a primary intervention goal, especially for people with the detached and distressed patterns. Those low in PTG may be better served by therapies that promote meaning making via narrative, such as narrative exposure therapy, trauma-focused CBT, or life review therapy. Intergenerational mentoring and other prosocial interventions (getting trauma survivors to engage in prosocial activity) is also a promising area for

promoting key strengths such as sense or purpose and generativity (Seeman et al., 2020). These approaches may especially help those low in PTG, who have not yet fully processed their experiences or determined how they can learn from them, such as by reevaluating priorities. On the other hand, approaches such as relaxation and grounding may help those who already report high levels of PTG but still report high levels of symptoms. In general, these findings suggest a shift away from the traditional focus on symptoms and the importance of focusing on meaning making and processing as key elements of recovery from trauma.

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