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POSTTRAUMATIC GROWTH, RESILIENCY, AND BASIC HOPE IN SOLDIERS FIGHTING IN EASTERN UKRAINE

In 2014, the Eastern Ukrainian regions of Donetsk and Lugansk became a scene of military operations that continue until now. Data from 58 soldiers who have taken part in the Ukrainian conflict were analyzed in order to answer the following question: How do basic hope and various aspects of resiliency explain the intensity of different aspects of posttraumatic growth (PTG) in soldiers fighting in the East of Ukraine? Four stepwise regression analyses were conducted. In each of them one of particular aspects of PTG was the dependent variable, whereas the group of predictors consisted of basic hope and three aspects of resiliency. It turned out that Personal strength as well as Appreciation of life were positively related to Openness to new experiences and a sense of humor. Relating to others was strongly related to Basic hope. Finally, Spiritual change depended on Basic hope as well as Persistence and determination in action. Because of the small sample size, the results should be treated with caution. However, they seem to encourage further research concerning this group.

Keywords: posttraumatic growth; resiliency; basic hope; combat veterans; war.

On 12 April 2014 a military conflict broke out in Ukraine. The Eastern Ukrainian regions of Donetsk and Lugansk became a scene of military opera-

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tions that continue until now. At the beginning, Russia did not admit its involvement in the conflict. Because there was no clear declaration of war, the Ukrainian defensive military operation was called an anti-terrorist operation (ATO). This type of operation is an example of a hybrid war characterized by the blurring of the differences between soldiers and civilians and between the state of war and peace (Gorzkowicz, 2017).

War is a phenomenon that threatens a person's physical and mental life. Constant sense of danger increases mental tension. Deprivation of basic needs triggers changes in various aspects of the person's psychosocial functioning. Until recently, it was believed that the key role of studies on traumatization was to identify the variables that determine the mental disorders occurring in the context of stressful events. In the 1990s, research on posttraumatic stress changed its direction. Scientists perceived the possibility of posttraumatic growth (PTG)—that is, an improvement in a person's functioning as a result of their struggle with a trauma. It was consistent with the earlier ideas of Frankl (1946/2009) and Dąbrowski (1967/1984). According to Frankl (2009), even the most traumatic experiences can be turned into valuable and good ones. Dąbrowski (1984) claimed that the process of positive disintegration activated by traumatic experience could lead not only to the normalization of the pre-crisis state but also to psychological growth, characterized by a new hierarchy of values. In this context, we assumed that the experience of war had a potential for changing people's views and values, giving new meaning to their experiences, and, consequently, that it could lead to personal development. It also seemed conceivable that among ATO veterans we would find those for whom war experience had triggered some positive life changes.

Tedeschi and Calhoun (2004) understand PTG as a "positive psychological change experienced as a result of the struggle with highly challenging life circumstances" (p. 1). Their functional-descriptive model includes factors that can affect PTG. The belief that traumatic experience is a kind of challenge is necessary for the process of growth to begin. PTG depends not only on the intensity and type of traumatic event but also on individual predispositions before the traumatic experience, such as: extraversion, openness to experience, activity, positive affect, optimism, coping style, and emotional self-disclosure. What also plays an important role is elements of the environmental context, such as the level of distress, social support, sociocultural influences, and openness to others. The interaction of external and internal factors triggers the cognitive processing of the trauma (Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 1996, 2004).

Tedeschi and Calhoun (1996, 2004) discuss PTG in five domains:

(1) *Appreciation of life*. It is a result of cognitive reconstruction due to confrontation with trauma. People typically report this as a major shift in how they approach and experience their daily lives. The sense of "being so lucky" is quite common. A person appreciates the "little things" and recognizes the importance of things previously taken for granted.

(2) *Relating to others*. Individuals report closer, more intimate, and more meaningful relationships with other people and an increased sense of compassion, particularly for others who share the same difficult fate.

(3) *Personal strength*. "Growth in this domain is experienced as a combination of the clear knowledge that bad things can and do happen and the discovery that 'if I handled this then I can handle just about anything'" (Tedeschi & Calhoun, 2004, p. 6).

(4) *Spiritual change*. Individuals after the trauma try to be more open to religious and spiritual questions. Faith allows them to cope and find deeper meaning in the new situation. "Individuals who are not religious, or who are actively atheistic, can also experience growth in this domain. There can be a greater engagement with fundamental existential questions and that engagement in itself may be experienced as growth " (Tedeschi & Calhoun, 2004, p. 6).

(5) *New possibilities*. As a result of changes in his/her core beliefs, the person identifies new possibilities for his or her life or the possibility of taking a new and different path in life.

It is well known that traumatic experience resulting from human violence can affect the victims' integrity and self-esteem (Ebert & Dyck, 2004). At the same time, a post-war crisis, which is especially linked with the experience of human violence, does not exclude good functioning in the future. Several researchers examined PTG in veterans and factors related to this phenomenon. Solomon and Dekel (2007) showed that PTSD symptoms were positively related to PTG in 103 former Israeli prisoners of war. Feder et al. (2008) examined 30 former Vietnam war prisoners and found a moderate degree of PTG— particularly, greater appreciation of life and personal strength. Length of captivity and optimism were predictors of PTG in this group. A study by Forstmeier, Kuwert, Spitzer, Freyberger, & Maercker (2009) revealed that the belief in a meaningful world was associated with greater PTG in 103 former German child soldiers of World War II. In their study with a sample of 272 veterans of Operations Enduring Freedom and Iraqi Freedom, Pietrzak et al. (2010) found that 72% of these veterans perceived a significant degree of PTG in at least one of the areas assessed. For example, 52.2% of them reported a change of priorities

in their life, 51.1% were able to better appreciate each day, and 48.5% were better able to handle difficulties. Soldiers with PTSD scored higher on an overall measure of PTG and on items concerning appreciation of life and personal strength. Hierarchical regression analysis revealed that younger age, PTSD symptoms, unit member support, and effort/perseverance as resilient personality characteristics were predictors for PTG. Hijazi, Keith, and O'Brien (2015) looked for predictors of PTG in a multiwar sample of 167 US veterans. They found that 69% of the sample reported at least a moderate degree of PTG in at least one dimension (the most frequently in the appreciation of life). Minority ethnicity, higher cognitive flexibility, and greater perception of moral wrongdoing were predictors for PTG. Tsai, Sippel, Mota, Sounthwick, and Pietrzak (2016) studied a representative sample of 1,838 US veterans who reported at least one potentially traumatic event and provided data for at two time points. It turned out that 59.4% of the veterans who reported at least moderate PTG maintained that level of PTG until two years later. Predictors for maintenance or increase in PTG were: PTSD symptoms, medical conditions, purpose in life, altruism, gratitude, religiosity, and an active lifestyle. Park et al. (2017) examined religious/spiritual coping in 630 veterans. They found that PTSD and PTG were negatively correlated and that negative religious/spiritual coping was negatively related to PTG and positively to PTSD, while positive religious/spiritual coping was positively associated with PTG. Finally, in their review, Habib, Stevelink, Greenberg, and Williamson (2018) note that "(ex-) military personnel reported experiencing increased empathy, being more compassionate and sensitive to the feelings of others and being better prepared for future unexpected events" (p. 621). In this context we can assume that PTG is quite a frequent phenomenon in combat veterans, and it is worth considering what variables can explain potential PTG in soldiers fighting in Eastern Ukraine. This seems to be an important question because the identification of factors related to PTG may help promote the reintegration of veterans into civilian life and improve their psychosocial functioning.

As we can see, different variables were analyzed in previous research; however, some of them (e.g. PTSD symptoms or religious coping) were taken into account more often than others (e.g., belief in a meaningful world or resilient personality characteristics). Therefore, we would like to examine the variables that have been less often studied in terms of their relationship with PTG in veterans. It is possible that basic hope may be one of such variables.

The concept of hope is present in Erikson's theory of psychosocial development. The author distinguishes eight developmental crises. During the first of

them the basic sense of trust in the surrounding world is shaped. An infant develops trust in his/her guardian and gains the main virtue—hope, which is a general, early-formed belief in the meaningful and favorable nature of reality (Erikson, 1993, 1994). The strength of this belief has an impact on the person's reactions in difficult moments and challenges, thus influencing the development of their personality (Trzebiński & Zięba, 2004). Erikson's concept of hope has been refined by Trzebiński and Zięba (2003a, 2003b, 2004), who proposed the term of "basic hope" instead of "hope." They give two reasons for their decision. First, hope is one of eight basic virtues in Erikson's theory. Second, the term "basic hope" was meant to differentiate the Eriksonian scientific concept from the common one and from the mainstream psychological concept assuming that hope is an expectation of a positive trajectory towards future events in one's life. Trzebiński and Zięba (2004, p. 173) define basic hope as "a fundamental constituent of an individual's world view, mostly unconscious and learned very early. It consists of the belief in two characteristics of the world: its higher order and sense and its general positivity towards a human being." Thus, basic hope is a feature of people's understanding of the world, whereas the other kind of hope is a belief about the self and one's own positive future. Strong basic hope gives a person the certainty that everything that happens to him/her makes sense and that there is more good than evil in the world (Trzebiński & Zięba, 2003b).

Different studies show that basic hope correlates positively with optimism (Zięba, Czarnecka-van Luijken, & Wawrzyniak, 2010), the tendency to forgive (Mróz & Kaleta, 2017; Trzebiński & Gruszecka, 2012), and coping strategies, especially existential ones (Trzebiński & Zięba, 2003a). According to Ogińska-Bulik (2013), strong basic hope favors the ability to use life's opportunities. In the study of accident victims by Zięba et al. (2010), a positive relationship between basic hope and beneficial changes after trauma was confirmed. The authors found that basic hope explained 20.3% of the variance in PTG. In this context, it seems that in a situation disturbing the previous order, such as war, basic hope may be a factor that allows a person to cope and build a new order.

Apart from basic hope, the other important factor that can be treated as a potential determinant of PTG is resiliency—a personality trait that refers to the degree of emotional stability after experiencing very stressful traumatic events (Block & Kremen, 1996; Ogińska-Bulik & Juczyński, 2008; Oleś, 2000; Uchnast, 1997). Some researchers use the term "resilience" (instead of resiliency) to refer to the process of successful adaptation to trauma and adversity (Bonano, 2004; Luthar, Cicchetti, & Becker, 2000). A number of scientific studies confirm that a high level of resiliency can be a strong defense in difficult day-to-

day situations and in times of traumatic events (Felcyn-Koczewska & Ogińska-Bulik, 2012). It is a buffer protecting people from the negative consequences of crises (Ogińska-Bulik & Juczyński, 2010). Fredrickson (2001) claims that resilient people intentionally recruit positive emotions to cope. Thanks to this, in difficult situations they can change the way of looking at the world, gain hope, and find alternative ways to solve their problem, which can trigger a spiral of health-beneficial processes.

Ogińska-Bulik (2013, pp. 106–110) analyzed data collected from 80 medical rescuers who survived traumatic events. Regression analysis showed that persistence and determination in action as an aspect of resiliency explained 10% of variance in PTG. However, it should be stressed that according to Tedeschi and Calhoun (2004) the link between PTG and concepts referring to coping capacity (such as resiliency, resilience, hardiness, etc.) is ambiguous: the aforementioned variables may be negatively associated, because coping capacities allow people to be less challenged by trauma, whereas struggle with the trauma is crucial for PTG. In other words, resiliency can act only as a buffer that protects from the negative consequences of trauma and adversity, but it does not necessarily promote PTG. At the same time, some studies show that resiliency/resilience can be positively related to PTG (Bensimon, 2012; Felcyn-Koczewska & Ogińska-Bulik, 2012; Ogińska-Bulik, 2010, 2012; Westphal & Bonanno, 2007). This ambiguity encouraged us to explore this relationship deeper.

In our study, presented further, we measured resiliency. In line with the understanding of this concept proposed by Ogińska-Bulik and Juczyński (2008), we treat resiliency as a personality characteristic important in the process of coping with difficulties. It is the ability to break away from unpleasant life events and to deal more effectively with stress and negative emotions (Ogińska-Bulik, 2013). In their empirical analyses, Ogińska-Bulik and Juczyński (2008) distinguished five aspects (factors) of resiliency, namely: (1) persistence and determination in action; (2) openness to new experiences and a sense of humor; (3) personal coping skills and tolerance of negative emotions; (4) tolerance of failure and view of life as a challenge; (5) optimistic attitude towards life and the ability to mobilize in difficult situations.

Assuming that resiliency is a personality characteristic important in the process of coping with difficult events, such as the situation of participation in warfare and the experience of war in one's own country, we posed the following question in the present study: *How do basic hope and various aspects of resiliency explain the intensity of different aspects of PTG in soldiers fighting in the East of Ukraine?*

METHOD

Participants

Eighty Ukrainian soldiers participating in the war applied for participation in the study. Data collected from 58 of them were qualified for the analysis. The individuals excluded from the analysis were those who prepared strategies of warfare but did not participate directly in war battles (9 people), refused to fill in questionnaires (7 people), or filled in them in an incomplete manner (6 people; after responding to a few items, they resigned from further participation in research). We selected the subjects purposefully, using the snowball method, obtaining information about war veterans at the Military Station in Slavuta, at the ATO Veteran Rehabilitation Centre in Ivano-Frankivsk, and at the military unit in Khmelnytskyi. Subjects' age ranged between 22 and 51 (M = 33.43, SD = 8.23). Forty-two participants completed the questionnaires on an individual basis, 16 soldiers completed the tasks in pairs. The study took place from 26 July 2018 until 16 August 2018.

Measures

In order to study PTG, we used the Post-Traumatic Growth Inventory. To measure resiliency we used the Assessment of Resiliency Scale. To assess basic hope, we used the Basic Hope Inventory. All the methods were translated from Polish into Ukrainian. Additionally, the translation of the Post-Traumatic Growth Inventory took into account an original English version of the measure. It was consistent with the translation procedure recommended by Drwal (1995), according to which different language versions of the method should be analyzed for the core meanings of items. Our study was treated as a pilot one. Thus, the internal consistency of Ukrainian versions of the scales was tested in this study for the first time (Table 1). In future research, the validity of these measures should be tested and their factor structure should be verified using CFA.

The Post-Traumatic Growth Inventory (PTGI). This questionnaire, designed by Tedeschi and Calhoun (1996), consists of 21 items and measures positive cognitive changes that have occurred as a result of the struggle with a traumatic situation. The PTGI was adapted into Polish by Ogińska-Bulik and Juczyński (2010) and contains four factor subscales: (1) Personal Strength (9 items)—discerning new possibilities and growth of one's own sense of strength as a result of a trauma; (2) Relating to Others (7 items)—the sense

of connection to others, an increase in empathy and altruism; (3) Appreciation of Life (3 items)—changes in one's philosophy of life, a shift in the system of priorities, appreciation of everyday reality; (4) Spiritual Change (2 items)—greater sense and comprehension of spiritual issues along with an increase in religiosity. In the Polish version of the PTGI as well as in the one used in our study there is no New Possibilities subscale. The higher the overall score, the more positive the changes in subjects' personal lives. Respondents indicate their answer on 6-point Likert scale (from 0—*I did not experience this change as a result of my crisis*, to 5—*I experienced this change to a very great degree as a result of my crisis*). Cronbach's alpha was .90 for the original version of the PTGI (Tedeschi & Calhoun, 1996) and was .93 in the Polish adaptation study (Ogińska-Bulik & Juczyński, 2010), while in the present study it was .95.

The Assessment of Resiliency Scale (SPP–25). This questionnaire, designed by Ogińska-Bulik and Juczyński (2008), measures the level of resiliency understood as a personality trait. It consists of 25 items grouped into five factor subscales: (1) Persistence and Determination in Action; (2) Openness to New Experiences and a Sense of Humor; (3) Personal Coping Skills and Tolerance of Negative Emotions; (4) Tolerance of Failure and View of Life as a Challenge; (5) Optimistic Attitude Towards Life and the Ability to Mobilize in Difficult Situations. Each subscale consists of five items rated on a 5-point Likert scale from 0—*strongly disagree* to 4—*strongly agree*. The overall score is the sum of subscale scores. The higher the score, the higher the level of resiliency. Cronbach's α in the Polish adaptation study was .89 (Ogińska-Bulik & Juczyński, 2008), while in the present study it was .94.

The Basic Hope Inventory (BHI–R). This questionnaire, designed by Trzebiński and Zięba (Zięba, 2015), measures basic hope understood as a general belief that the world is ordered and favorable to people. This method consists of 20 items rated on a 5-point Likert scale from 1—*strongly disagree* to 5—*strongly agree*. The higher the score, the higher the level of basic hope. In the study by the authors of BHI–R, the value of Cronbach's α was .86, whereas in our study it was .90.

RESULTS

Preliminary Analyses

All the analysis in our study was performed on raw scores. First, we calculated coefficients of kurtosis, skewness, and the Shapiro-Wilk test for each construct. Given that the values for asymmetry and kurtosis between -2 and +2 are considered acceptable to prove normal univariate distribution (George & Mallery, 2010), we could not treat three variables as normally distributed, namely (1) SPP–25 overall score, and the scores on two subscales of this measure: (2) Personal Coping Skills and Tolerance of Negative Emotions, and (3) Tolerance of Failure and View of Life as a Challenge (Table 1).

Assuming that the middle of the scale for the PTGI is 52.5, only 34.5% of the veterans in our study had lower scores. In the study by Tedeschi and Calhoun (1996), men who had had one or more severe traumas in the past 12 months obtained a PTGI mean score of 73.6. In our sample, 31% of the soldiers scored higher than 73. The middle of the scale for the BHI–R is 60. In our group, 80% of the veterans scored higher. The middle of the scale for SPP–25 is also 60. In our study, 86.2% of the soldiers had higher scores.

Table 1. *Distribution of Scores on Variables and Internal Consistency*

Variables	Min.	Max.	*M*	*SD*	Skewness	Kurtosis	S–W	$p_{S\text{-}W}$	α
BHI–R	39	96	71.66	12.18	-0.19	-0.05	0.99	.817	.90
PTGI	11	105	60.95	23.21	-0.40	-0.41	0.97	.187	.95
Personal strength	3	45	28.19	10.95	-0.64	-0.27	0.95	.015	.91
Relating to others	0	35	18.71	8.69	-0.32	-0.66	0.97	.208	.90
Appreciation of life	0	15	9.16	3.66	-0.34	-0.44	0.97	.157	.58
Spiritual change	0	10	4.90	2.91	0.02	-0.91	0.96	.039	.62
SPP–25	17	99	74.98	16.00	-1.60	3.72	0.87	<.001	.94
Persistence	4	20	14.26	3.34	-0.68	1.03	0.95	.017	.63
Openness	5	20	15.47	3.51	-1.19	1.44	0.90	<.001	.77
Personal coping skills	4	20	15.02	3.44	-1.08	2.07	0.91	<.001	.81
Tolerance of failure	2	20	15.83	3.62	-1.58	3.80	0.86	<.001	.83
Optimistic attitude	2	20	14.41	3.92	-1.28	1.98	0.89	<.001	.81

Note. S–W—the Shapiro–Wilk test; $p_{S\text{-}W}$—significance level for the Shapiro–Wilk test.

We also calculated Pearson bivariate correlations between the BHI–R, SPP–25, and PTGI scales and subscales, with the exception of the three variables mentioned above, which were not normally distributed and in whose case we computed Spearman's r_{ho} (Table 2).

Table 2. *Correlations Among the Variables: Pearson's r (in White Fields) and Spearman's r_{ho} (in Shaded Fields)*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. BHI–R	–										
2. PTGI	.57***	–									
3. SPP–25	.48***	.52***	–								
4. Personal strength	.51***	.94***	.54***	–							
5. Relating to others	.53***	.89***	.42***	.73***	–						
6. Appreciation of life	.38**	.78***	.44***	.72***	.58***	–					
7. Spiritual change	.55***	.78***	.45***	.68***	.65***	.57***	–				
8. Persistence	.33*	.44***	.72***	.42***	.36**	.33*	.43***	–			
9. Openness	.57***	.57***	.88***	.60***	.44***	.41***	.45***	.68***	–		
10. Personal coping skills	.31*	.38**	.84***	.43***	.29*	.33**	.30*	.46***	.67***	–	
11. Tolerance of failure	.56***	.53***	.87***	.56**	.41***	.40**	.35**	.44***	.78***	.75***	–
12. Optimistic attitude	.46***	.44***	.85***	.43***	.41***	.32*	.29*	.71***	.78***	.69***	.73***

Note. BHI–R—the Basic Hope Inventory; PTGI—the Post-Traumatic Growth Inventory; SPP–25—the Assessment of Resiliency Scale; *** $p < .001$; ** $p < .01$; * $p < .05$.

Regression Analyses

In our conceptual regression model, five subscales of resiliency (SPP–25) and the overall score on basic hope (BHI–R) were to be predictors for four aspects of posttraumatic growth (PTGI dimensions). Because that two subscales of resiliency were not normally distributed (Personal Coping Skills and Tolerance of Failure), we had to exclude them from our analysis. Additionally, the multicollinearity problem was identified in our model: the variance inflation factors (VIF) ranged from 1.51 to 3.28 for particular potential predictors. As our group of soldiers was too small to perform SEM, we decided to conduct a stepwise regression using the forward method. When the multicollinearity problem exists,

the stepwise regression removes fewer significant predictors than, for example, a regression using the enter method (Bedyńska & Książek, 2012; Field, 2009).

We conducted four stepwise regression analyses (Tables 3–6). In each of them, one of the aspects of PTG was a dependent variable, whereas the group of predictors consisted of basic hope and three aspects of resiliency: (1) Persistence and determination in action; (2) Openness to new experiences and a sense of humor; (3) Optimistic attitude towards life and the ability to mobilize in difficult situations.

It should be noted that our sample was relatively small and therefore we have to interpret the results with caution. On the other hand, reaching out to a large group of soldiers actively fighting in Eastern Ukraine and interviewing them is an extremely difficult undertaking. For this reason, we decided to carry out four regression analyses, treating them as a form of exploration of the issue.

The first regression analysis (Table 3) revealed that Personal strength (PTGI) was positively related to Openness to new experiences and a sense of humor (SPP–25; $\beta = .60$, $p < .001$). This means that the more a person is able to accept not only good but also difficult experiences as a normal part of life, and the more he/she can perceive problems from a humorous perspective, the greater the increase in his/her individual strength after the traumatic experience. Openness to new experiences and a sense of humor explained 35% of the variance in Personal strength.

Table 3. *Stepwise Regression Analysis: Basic Hope and Three Dimensions of Resiliency as Predictors for Personal Strength (PTG)*

Predictors	*B*	SE	β	*t*	*p*
Constant	-0.87	5.27	–	-0.17	.869
Openness (SPP–25)	**1.88**	**0.33**	**.60**	**5.65**	**<.001**
Basic hope (BHI–R)	–	–	.24	1.93	.059
Persistence (SPP–25)	–	–	.15	0.10	.921
Optimistic attitude (SPP–25)	–	–	-.10	-0.56	.577

Note. $R^2 = .35$; $F(1, 57) = 31.92$; $p < .001$.

The second analysis (Table 4) showed that Relating to others (PTGI) was positively linked to Basic hope (BHI–R; $\beta = .53$, $p < .001$). This means that if a person believes that there is more good than evil in the world and that everything that happens to him/her makes sense, then there is greater chance that the traumatic experience will result in a growth of empathy, altruistic behavior, and

stronger relations with others. Basic hope explained 27% of the variance in Relating to others.

Table 4. *Stepwise Regression Analysis: Basic Hope and Three Dimensions of Resiliency as Predictors for Relating to Others (PTG)*

Predictors	*B*	*SE*	β	*t*	*p*
Constant	-8.43	5.88	–	-1.43	.157
Basic hope (BHI–R)	**0.38**	**0.08**	**.53**	**4.68**	**<.001**
Persistence (SPP–25)	–	–	.21	1.81	.075
Openness (SPP–25)	–	–	.20	1.46	.151
Optimistic attitude (SPP–25)	–	–	.21	1.68	.098

Note. $R^2 = .27$; $F(1, 57) = 21.93$; $p < .001$.

In the third regression analysis (Table 5) it turned out that Appreciation of life (PTGI) was positively related to Openness to new experiences and a sense of humor (SPP–25; β = .41, $p = .001$). This suggests that the more a person accepts both good and difficult experiences as a normal part of life, the greater the positive change in his/her philosophy of life after the trauma, enhancing the ability to enjoy everyday life. Openness to new experiences and a sense of humor explained 15% of the variance in Appreciation of life.

Table 5. *Stepwise Regression Analysis: Basic Hope and Three Dimensions of Resiliency as Predictors for Appreciation of Life (PTG)*

Predictors	*B*	*SE*	β	*t*	*p*
Constant	2.58	2.01	–	1.28	.206
Openness	**0.43**	**0.13**	**.41**	**3.35**	**.001**
Basic hope (BHI–R)	–	–	.21	1.44	.155
Persistence (SPP–25)	–	–	.10	0.62	.539
Optimistic attitude (SPP–25)	–	–	.01	0.05	.964

Note. $R^2 = .15$; $F(1, 57) = 11.22$; $p = .001$.

In the final analysis (Table 6), it transpired that Spiritual change (PTGI) was positively linked with two variables: Basic hope (BHI–R; β = .46, $p < .001$) and Persistence and determination in action (SPP–25; β = .29, $p = .014$). This means that becoming more open to religious and spiritual questions after the trauma is

supported by the belief that the world is good and favorable to people and by the attitude of not giving up when faced with a difficult situation. Basic hope as well as Persistence and determination in action explained 35% of the variance in Spiritual change.

Table 6. *Stepwise Regression Analysis: Basic Hope and Three Dimensions of Resiliency as Predictors for Spiritual Change (PTG)*

Predictors	*B*	*SE*	β	*t*	*p*
Constant	-6.43	2.00	–	-3.21	.002
Basic hope (BHI–R)	**0.11**	**0.03**	**.46**	**4.03**	**<.001**
Persistence (SPP–25)	**0.25**	**0.10**	**.29**	**2.53**	**.014**
Openness (SPP–25)	–	–	-.01	-0.03	.978
Optimistic attitude (SPP–25)	–	–	-.29	-1.86	.068

Note. $R^2 = .35$; $F(2, 57) = 16.40$; $p < .001$.

DISCUSSION

The aim of the presented study was to answer the question: How do basic hope and various aspects of resiliency explain the intensity of different aspects of PTG in soldiers fighting in the East of Ukraine? It turned out that Personal strength as well as Appreciation of life were positively related to Openness to new experiences and a sense of humor. Relating to others was linked to Basic hope, whereas Spiritual change depended on Basic hope and Persistence and determination in action. Since the number of soldiers in the sample was relatively small, the results obtained should be interpreted with caution. However, our findings seem to be interesting.

Many studies conducted so far have shown the positive impact of traumatic events (Feder et al., 2008; Forstmeier et al., 2009; Hijazi et al., 2015; Kimhi, Eshel, Zysberg, & Hantman, 2010; Pietrzak et al., 2010; Solomon & Dekel, 2007). Similarly, in our study 31% of veterans reported a level of PTG higher than the mean level observed by Tedeschi and Calhoun (1996) in men with severe traumas.

Additionally, although Tedeschi and Calhoun (2004) suggested that concepts referring to coping capacity do not have to promote PTG and can even be negatively associated with PTG, our analyses generally show that both basic hope and dimensions of resiliency are positively related to different PTG aspects among soldiers taking part in active combat. Our results are consistent with some other

studies. Felcyn-Koczewska and Ogińska-Bulik (2012) found a positive correlation between basic hope and the overall score on PTG as well as on the four PTG dimensions. Also the study by Forstmeier et al. (2009) showed that the belief in a meaningful world was positively related to PTG in 103 former German child soldiers of World War II. Pietrzak et al.'s (2010) study involving a sample of 272 veterans revealed that resilient personality characteristics such as effort/perseverance were predictors for PTG. Also studies by Ogińska-Bulik show relationships between PTG and different aspects of resiliency. For example, in the group of adolescents PTG was predicted by openness to new experiences and a sense of humor (Ogińska-Bulik, 2012). In mourning people PTG was predicted by persistence and determination in action (Felcyn-Koczewska & Ogińska-Bulik, 2012), whereas in women after mastectomy PTG was predicted by tolerance of failure (Ogińska-Bulik, 2010).

Particular results of our four analyses also find support in other studies, though these are not studies concerning veterans. Namely, we found that positive changes in relation with others (Relating to others; PTG) were predicted by Basic hope. By such positive changes we mean closer, more intimate, and more meaningful relationships full of compassion for those who share the same difficult fate (Tedeschi & Calhoun, 2004). Basic hope is the belief that there is more good than evil in the world. A the same time, this kind of belief gives the certainty that everything that happens makes sense (Trzebiński & Zięba, 2003b). How to interpret the link between basic hope and improvement in relationships? Presumably, after a strain a person with high basic hope tries to attribute a positive meaning to the disagreeable experience. This attitude can (intentionally or unintentionally) support other people who share similar difficulties. As a result the relationship with those people may deepen. Additionally, basic hope is associated with the tendency to forgive (Mróz & Kaleta, 2017; Trzebiński & Gruszecka, 2012) and with optimism (Zięba et al., 2010). Optimism can foster a more positive perception of a given relationship, and together with the willingness to forgive others for their weaknesses it is conducive to maintaining relations. In this context, it seems possible that these two variables are mediators in the link between basic hope and strong positive relationships with people.

Two other analyses in our study concerned Personal strength and Appreciation of life. It should be emphasized that studies of war prisoners (Feder et al., 2008; Solomon & Dekel, 2007) and other veterans (Pietrzak et al., 2010) revealed increased PTG, especially in the dimensions of Appreciation of life and Personal strength. In a multiwar sample of US combat veteran, the most frequently indicated dimension of PTG was also Appreciation of life (Hijazi et al.,

2015). Our study suggests that these two aspects of PTG typically perceived by veterans are explained by Openness to new experiences and a sense of humor. In Ogińska-Bulik's (2012) research this dimension of resiliency predicted not only general PTG but also two of its aspects, Personal strength being one of them. Also Murphy and Hevey (2013) obtained a result quite similar to ours. They studied resilience (not resiliency) and found its positive link with PTG only in the domains of Personal strength and Appreciation of life.

The relationship between veterans' increasing personal strength and their openness to new experiences, even stressful ones, is consistent with the thesis advanced by Maslow (1968), who underlines that difficult experiences (discipline, deprivation, frustration, pain, tragedy) "have something to do with a sense of achievement and ego strength and therefore with the sense of healthy self--esteem and self-confidence" (p. 4).

How to interpret the finding that sense of humor is related to personal strength and greater appreciation of life (PTG)? Tugade and Fredrickson (2004, 2007) claim that resilient people use positive emotions to "bounce back" from negative emotional experiences. While using positive emotions in the process of overcoming negative emotions, resilient soldiers can probably look more positively at the world. It is therefore easier for them to find constructive ways of solving the problem. As a result, they can feel stronger and more capable of coping with difficulties (Personal strength), they can enhance their belief in a favorable world, and, consequently, they can appreciate their life more strongly (Appreciation of life). If, additionally, a soldier is characterized by openness to new experiences, he treats his experience as a value, regardless of its content—and the diversity of valuable experiences is also conducive to the appreciation of life.

Finally, our study suggests that Spiritual change (PTG) is related to Basic hope and Persistence and determination in action. Thus, veterans who deepen their spirituality and religiosity are those who have experienced the horrors of war but still believe that the world is more good than bad and do not give up in their fight for matters important to them. According to Pargament (1997), religion can affect the understanding of the world as well as make reality and suffering understandable and bearable. It is possible that veterans' spiritual development and their openness to religious issues is related to their search for a new meaning of the situation (the war) that they cannot change (Park, 2006). Their experience of stress may be decreased not because the situation itself has been changed, but because the meaning attributed to this situation has been changed (Park & Folkman, 1997). In this context, one can speak about "meaning-focused coping strategies." Such strategies are used in situations of chronic and uncon-

trollable stress (Heszen, 2014), and war seems to be such a situation. Our idea that soldiers' religion can serve as a meaning-making framework in coping with trauma seems to be supported by several studies (Feder et al., 2008; Park et al., 2017; Tsai et al., 2016).

To sum up, our findings partially confirm and partially extend the knowledge on PTG in veterans after trauma.

When it comes to the limitations of our research, the relatively small group of respondents should be stressed once again. A certain justification for this fact is the specificity of the group—it is difficult to reach the soldiers who actively fought in Eastern Ukraine and encourage them to participate in a study. Secondly, the internal consistency of some subscales, which was not tested earlier in the group of Ukrainian soldiers, turned out to be quite low in our project. Presumably, it may be linked with the fact that two of those subscales (Appreciation of Life and Spiritual Change) are very short. In the light of these shortcomings, our findings should be treated with caution. Thirdly, due to the applied correlation analysis (regression), we cannot unequivocally state the direction of the investigated relationships. Based on theory, we are inclined to assume that PTG is determined by basic hope and resiliency rather than vice versa. However, it cannot be ruled out that these links work both ways. Fourth, in our study only relatively stable personality dispositions were analyzed as predictors of PTG. The exploration of dynamic variables would be more useful to know what soldiers can change to better cope with difficulties.

Given that different abilities, skills, and specific behaviors can be gained, developed, and modified by a person to adapt to a challenging situation, in further research it would be worth exploring such dynamic variables. It is also important to check in a longitudinal study to what extent the level of PTG observed in our soldiers will turn out to be stable. Additionally, as we could note, narratives of soldiers who volunteered to take part in military operations are different from the narratives of professional soldiers or those who were conscripted into the armed forces. Therefore, it would be interesting to carry out research on potential differences in PTG among these three groups of veterans.

Apart from contributing to the knowledge about PTG in soldiers fighting on the Eastern Ukrainian front, our findings can also have a practical aspect. They can be helpful in therapeutic work with veterans of the Russian-Ukrainian conflict. It is true that our study concerned relatively stable personality dispositions, such as basic hope and resiliency. However, considering their positive role in coping with trauma, it seems worthwhile to work with veterans to help them to develop and enhance certain aspects of resiliency, such as viewing life as a chal-

lenge, determination in action, and optimistic attitude towards life by looking for the positive sides of difficult situations. It could help in the reintegration of veterans into civilian life and improve their psychosocial functioning.

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