ANNALS OF PSYCHOLOGY/ROCZNIKI PSYCHOLOGICZNE
2022, XXV, 99–120

DOI: https://doi.org/10.18290/rpsych2022.0006

ASSESSING POSITIVE POSTTRAUMATIC CHANGES AMONG PROFESSIONALS WORKING WITH TRAUMA VICTIMS: THE SECONDARY POSTTRAUMATIC GROWTH INVENTORY

Nina Ogińska-Bulik[1] and Zygfryd Juczyński[2]

[1] University of Łódź

[2] WSB University in Toruń

By providing constant help to trauma victims, the helpers themselves run the risk of secondary traumatization. As a rule, research focuses on the negative consequences of secondary trauma. Meanwhile, there are also positive changes in the form of Secondary Posttraumatic Growth (SPTG). The present study describes the design and testing of a new tool for measuring SPTG. Thirty items were presented to employees from five different professions constantly working with trauma victims ($N = 580$). A 4-factor solution (PCA) turned out to be clear and unambiguously interpretable. After excluding items based on their component loading and redundancy, the tool was pared down to 12 items. A separate sample used in confirmatory factor analysis (CFA) yielded good fit indexes. The four dimensions were given the following designations: I. New challenges and an increase in professional competences, II. Increase in spiritual experiences and a greater sense of responsibility for others, III. Greater confidence in oneself and appreciating life, IV. Increased acceptance and actions for others. Cronbach's alpha was .90. The inventory demonstrated high stability, as indicated by the two-month test–retest stability value (.78). The theoretical validity was estimated by comparing SPTGI scores with other measures which should be associated with secondary positive changes. The SPTGI is a new, reliable, and valid instrument for measuring positive posttraumatic changes among professionals exposed to secondary trauma. It can be useful in scientific research and in clinical practice.

Keywords: consequences of trauma; secondary posttraumatic growth; Secondary Posttraumatic Growth Inventory; psychometric properties; professionals working with trauma victims.

Nina Ogińska-Bulik, https://orcid.org/0000-0001-8868-407X; Zygfryd Juczyński, https://orcid.org/0000-0002-2794-9254.

Correspondence concerning this article should be addressed to Zygfryd Juczyński, Wyższa Szkoła Bankowa w Toruniu, ul. Młodzieżowa 31A, 87-100 Toruń, Poland; e-mail: zjucz77zj@gmail.com.

Handling editor: Piotr Oleś, John Paul II Catholic University of Lublin. Received 31 July 2021. Received in revised form 14 Aug. 2021, 7 April 2022. Accepted 9 April 2022. Published online 13 June 2022.

Positive Posttraumatic Changes

Professionals working with trauma victims are exposed to many occupational stressors resulting both from daily duties and specific stressors. Specific stressors are related to direct and indirect exposure to events of traumatic nature (Austin et al., 2018; Behnke et al., 2019; Ogińska-Bulik, 2015; Ogińska-Bulik & Juczyński, 2020). Many professionals whose duties involve helping people who have undergone various injuries, accidents, violence or suffering from a serious, life-threatening disease are themselves at risk of indirect exposure to the trauma. However, by working with trauma victims, these professionals are also exposed to the indirect (secondary) negative consequences of trauma, mostly reflected in the form of secondary traumatic stress (STS), also known as secondary traumatic stress disorder (STSD) (Figley, 1995).

Interestingly, helping trauma victims may also be a source of positive posttraumatic changes nested in secondary, or vicarious posttraumatic growth (SPTG/VPTG); however, the term *professional posttraumatic growth* is also used when referring to people who professionally help trauma victims (Tosone et al., 2014). SPTG is a phenomenon similar to posttraumatic growth (PTG), as described by Tedeschi and Calhoun (1996, 2004), regarding people who directly experience trauma. SPTG itself is defined as the positive changes occurring as a result of vicarious traumatic exposure (Arnold et al., 2005; Brockhouse et al., 2011; Calhoun & Tedeschi, 2013; Manning-Jones et al., 2015, 2017). These positive changes, as in the case of PTG, include changes in self-perception, relationships with others, and philosophy of life. Similar to VPTG, *vicarious resilience* (VR) is understood as a process "characterized by a unique and positive effect that transforms therapists in response to client trauma survivors' own resiliency" (Hernández et al., 2007, p. 237). It is a term for positive meaning-making, growth and transformation taking place in the therapist following therapeutic processes addressing trauma recovery, which result from exposure to the resilience demonstrated by the client.

It is worth comparing the construct which is PTG with SPTG. Abel et al. (2014) conducted a study to evaluate the usefulness of the five-factor PTG model for explaining SPTG. SPTG has been shown to best explain personal growth among assistants and changes in beliefs about the world. However, as the authors note, despite the clear similarities between SPTG and PTG, some differences can be noticed between these phenomena.

The differences between PTG and SPTG are indicated by interviews with therapists who provide help to people after traumatic experiences (Arnold et al., 2005; Hyatt-Burkhart, 2013). They show that exposure to secondary trauma leads to increased sensitivity and compassion, increased insight, greater self-confidence,

tolerance and increased empathy. These changes promote a better understanding of trauma victims, acceptance of their reactions and behaviors, and recognition of their ability to cope. Such changes were not emphasized in the case of PTG. Some of the therapists surveyed noticed an increased awareness of the negative consequences of this type of work, but this awareness led to a deeper understanding of the complexity of the entire spectrum of human functioning. Arnold and colleagues (2005) indicate that people experiencing SPTG exhibit slightly greater overall resistance, which is more than PTG, but slightly lesser changes in their sense of personal strength.

The common elements of PTG and SPTG are spiritual changes, but in the case of SPTG they seem to be of a slightly different nature. People who directly experienced traumatic events reported a personal increase in spirituality. Meanwhile, people helping trauma victims pointed rather to ruminating of a spiritual nature (spirituals broadening) and related this process to the acceptance of spiritual beliefs treated as a factor conducive to the process of post-traumatic adaptation without experiencing changes in personal beliefs (Arnold et al., 2005).

Moreover, the therapists surveyed by Arnold et al. (2005) emphasized that the spiritual changes observed in their charges contributed to the expansion and deepening of their own views in this area. Such observations indicate the possibility of transmitting positive changes from trauma victims to helpers. The research by Froman (2014), who conducted qualitative research among professionals dealing with mental health and working with trauma victims, shows that in the case of SPTG, in addition to changes characteristic of PTG, positive emotions are also observed when effective help is provided. Moreover, resilience increases, especially when the mentees are highly effective in terms of coping, increased gratitude and the need to develop their own personality. The surveyed professionals also indicated a greater sense of belonging to the therapeutic community and an increased motivation to undertake practices aimed at protecting oneself.

Other researchers also report an increase in practical wisdom and benevolence among those working with victims of trauma (Vishnevsky et al., 2015), an increase in self-worth, greater acceptance of others and faith in the efficiency of undertaken activity, and in a greater appreciation of their own work (Cohen & Collens, 2013). Still others point to unique aspects of SPTG, such as increasing the awareness of work as a value or increasing professional abilities and competences (Barrington & Shakespeare-Finch, 2013; Guhan & Liebling-Kalifani, 2011; Splevins et al., 2010).

Research on SPTG remains in its initial stage and so far, there is no data explaining the mechanism of its development. However, it can be assumed that SPTG develops through the same process as PTG (Calhoun et al., 2010; Cohen & Collens, 2013; Hyatt-Burkhart, 2013). The current theoretical model of PTG (Tedeschi

& Calhun, 1996) has recently been refined based on growing empirical research and clinical experience (Tedeschi et al., 2018). Core belief disruption and deliberate ruminations are identified as the strongest predictors of PTG, whereas intrusive rumination is more strongly associated with symptoms of posttraumatic stress. The traumatic events experienced by trauma victims constitute a significant challenge for the cognitive schemata of the professionals helping them. Those challenges trigger cognitive activity in the form of trauma processing, most often in the form of cognitive strategies of coping with trauma.

The authors of the concept of PTG (Calhoun et al., 2010; Tedeschi & Calhoun, 1996, 2004) also underline the importance of individual traits present before the trauma and the presence of social support that may influence the direct and indirect development of positive posttraumatic changes, in facilitating the cognitive processing of trauma. Among the individual characteristics of those helping trauma victims, empathy seems to play a significant role. Previous research, especially among therapists (Brokhouse et al., 2011; Linley & Joseph, 2007), shows a positive relationship between empathy and SPTG.

It should be noted that the presence of secondary positive posttraumatic changes does not exclude the occurrence of negative changes. Studies conducted in this area, although not all of them, confirmed a positive relationship between STS and SPTG (Manning-Jones et al., 2017; Molnar et al., 2017; Ogińska-Bulik & Juczyński, 2020).

Secondary Posttraumatic Growth Among Professionals Working With Trauma Victims

The occurrence of secondary positive posttraumatic changes among professionals seems to be quite common, but the results are varied and inconsistent. Research conducted in a group of therapists (Arnold et al., 2005) found that all respondents reported the occurrence of at least one positive change as a result of working with traumatized people, and 90% of them admitted to observing and encouraging posttraumatic growth in patients as a positive consequence of the work performed. In turn, Linley and collaborators (2005) reported a small degree of secondary positive changes among therapists. The severity of positive changes resulting from secondary exposure to trauma seems to be related to the type of events experienced by clients or the workplace. For example, therapists working with victims of domestic violence demonstrated lower severity of SPTG than those working with clients who experienced other types of traumatic events (Ben-Porat & Itzhazky, 2009).

High levels of SPTG occur in social workers. Manning-Jones et al. (2017) found that representatives of this group demonstrated a higher intensity of SPTG than

four other groups of professionals working with trauma victims. However, British social workers who completed the PTGI scored in the small to moderate range of secondary positive posttraumatic changes (Gibbons et al., 2011). Similarly, Rhee and collaborators (2013) found a low level of SPTG in a sample of child protective services social workers.

A high degree of SPTG is also observed in medical personnel working with trauma victims. A study by Lev-Wiesel and collaborators (2009) indicates that nurses show stronger SPTG than social workers. A high degree of secondary positive posttraumatic changes was displayed by nurses participating in life-threatening childbirths (Beck et al., 2016, 2017), as well as by nurses employed in palliative care (Ogińska-Bulik, 2018). Kang et al. (2018) revealed a moderate degree of SPTG in ambulance personnel, including nurses, physicians, and other ambulance workers from emergency centres, while Israeli studies indicate a rather low degree of positive posttraumatic changes among medical personnel (Taubman-Ben-Ari & Weintroub, 2008).

Comparative studies involving five groups of professionals working with trauma victims (Manning-Jones et al., 2017) found the highest degree of SPTG to occur in social workers, followed by nurses, counsellors, and medical doctors, while the lowest rates were recorded for psychologists.

It is worth noting that the helpers appear to demonstrate less severe positive posttraumatic changes than those experienced by trauma victims. This is evidenced by comparative studies conducted by Lambert and Lawson (2013), who note that those affected by hurricanes showed a significantly higher intensity of posttraumatic growth than the people who provided them with help (which was the case for both professionals and volunteers).

Measurement of SPTG

The vast majority of studies assessing SPTG used PTG measuring tools. Among them, the most popular is the Posttraumatic Growth Inventory (PTGI), developed by Tedeschi and Calhoun (1996). The PTGI is a 21-item self-reported scale measuring positive changes after struggling with adversity; it has been used in 87% of studies aimed at assessing the occurrence of secondary positive posttraumatic changes (Bybee, 2018).

Some other tools developed to assess positive posttraumatic changes may also be used to measure SPTG, such as the Changes in Outlook Questionnaire (CiOQ) (Joseph et al., 1993) or Perceived Benefit Scale (PBS) (McMillen & Fisher, 1998); however, unlike the PTGI, these instruments were not designed to measure

the positive effects of secondary trauma. Recently, the Shared Trauma and Professional Posttraumatic Growth Inventory (STPPG) has been developed to understand the nature of dual trauma exposure (Tosone et al., 2014); however, the scale concerns the experiences of mental health professionals exposed to both man-made and natural disasters.

To assess the perceived benefits of secondary exposure to trauma, the Vicarious Resilience Scale (VRS) may be used (Killian et al., 2017). It consists of 27 items and measures seven aspects of secondary resilience. The result of the scale has been found to moderately and positively correlate with posttraumatic growth and compassion satisfaction, indicating convergent validity. However, the scale was developed to assess vicarious resilience, not vicarious growth.

In addition to questionnaires, inventories, and scales, SPTG may also evaluated using qualitative methods, such as narrative techniques, structured interviews, and open-ended questions. However, these are rarely used.

To date, no specific tools have been developed to measure secondary growth after trauma, and as differences exist between directly and indirectly experienced positive posttraumatic changes, a new instrument is needed to measure specific secondary posttraumatic growth. Therefore, the present study describes the construction of such a tool, the SPTGI, as well as the establishment of its psychometric properties, i.e. its reliability and validity, and the normalized of its results. The first study assesses the factor structure, reliability, and validity of the SPTGI, and the prevalence of secondary trauma posttraumatic growth among professionals working with trauma victims, while the second study examines its factor structure.

METHOD

Participants

The first study was conducted in various centres in Poland, including crisis intervention centers, social care institutions, courts, medical rescue stations, emergency wards in several Polish hospitals as well as cancer wards, intensive care units, and hospices. A total of 580 professionals working with trauma victims participated in the study. The criteria for inclusion in the study were working with people who had experienced trauma and the completion of the tools provided. Ultimately, the analysis included 500 respondents who confirmed permanent work with people after traumatic experiences and fully completed the questionnaires supplied to them. Women predominated among the five professional groups examined, which was

to be expected considering the gender bias of these professions in Poland. The age range was from 20 to 67 years, and the mean work record was 16 years. The mean workload, expressed as a percentage of working time devoted to direct assistance to clients in relation to all duties, was 63%.

The results of the separate sample of 200 people who completed the SPTGI were used to perform the confirmatory factor analysis (CFA). The participants were paramedics and nurses exposed to secondary traumatization. The group comprised 63.5% women and 36.5% men, with a mean age of 36.40 years (range from 20 to 58 years). Each of the respondents was informed about the purpose of the research. The participants were informed of the voluntary nature of the study and were assured that neither individuals nor organizations would be identified. The tests were managed individually.

The Course of Work on the Construction of the Secondary Posttraumatic Growth Inventory

The initial set of items was obtained from a variety of sources. First, various tools for measuring posttraumatic growth, such as the PTGI, PBS and VRS, were reviewed. A number of theoretical assumptions concerning the construct of posttraumatic growth were taken into consideration during the formulation of new items. An initial version consisting of 40 items was first tested on a group of 10 male and female psychologists and social workers, aged 20–50 years, working with trauma victims. Eventually the number of items in the final version of the scale was reduced to 30 based on pretest results, the judgments of the two lead researchers and a group of students engaged in the study, and after the elimination of ambiguous statements.

The introduction included in the instrument informed about the purpose of the research, the method of evaluation and the instructions for use. After reading each statement, the participant recorded the degree of change that occurred following working with people who were exposed to traumatic events, from 0 (*I have not experienced this change*) to 5 (*I have experienced this change to a very great degree*).

Additional Instruments

A survey designed for the purposes of the study was also employed. It includes questions about age, employment history as a professional helping trauma victim, number of hours per week spent on working with clients, workload expressed by the percentage of direct assistance to clients in relation to all duties performed. Additionally, four standard measurements were used to assess the validity of the SPTGI,

i.e. the Posttraumatic Growth Inventory (PTGI) and the Secondary Traumatic Stress Inventory (STSI) (Ogińska-Bulik & Juczyński, 2020), the Cognitive Processing of Trauma Scale (CPOTS) (Ogińska-Bulik & Juczyński, 2018), and the Empathic Sensitivity Scale (ESS) (Kaźmierczak et al., 2007).

Data Analyses

The development of the SPTGI was undertaken in two studies. In the first, the factor structure of the operationalized variable was determined using the results of the SPTGI from different groups of people exposed to secondary traumatization. A principal component analysis (PCA; Oblimin rotation) of the 30 items was carried out. The component loadings were estimated freely, and the number of components (exploratory factor analysis) was determined using the Kaiser criterion and scree plot analysis. A main component loading of at least .40 and no loading above .40 on any other component was regarded as acceptable for the final item selection. Internal consistency was then scrutinized to exclude any redundant items without lowering Cronbach's α levels.

The next step, performed as part of the second study ($N = 200$), tested the model fitness. Confirmatory factor analysis (CFA) was conducted using the asymptotically distribution-free method to examine the overall fit of the model. The indices derived were the comparative fit index (CFI) and the incremental fit index (IFI); values of .90 for both variables were regarded as acceptable model fits. A good model fit was indicated by root mean square error of approximation (RMSEA) values equal to or less than .05.

Statistical principal component analysis (PCA) was used to examine the factor structure of the SPTGI. Scree plot analysis was used to determine the number of factors to extract. Subsequently, a confirmatory factor analysis (Study 2) was run as an extension to the PCA, to test specific hypotheses about the structure of the factor loadings and intercorrelations. Reliability analysis was performed to examine the internal consistency. Pearson's correlations were used to determine the two-month test-retest reliability of the SPTGI subcomponents. The construct validity of the instrument was checked by comparing its results with variables that should correlate with the SPTGI. Analysis of variance for independent samples was used to evaluate differences in means between groups. All data were analyzed using STATISTICA 13.3.

RESULTS

Factor Structure of the Secondary Posttraumatic Growth Inventory

First, the assumptions of normal distribution and strength of the correlations between the variables were tested. The adequacy of the data was confirmed by Bartlett's test of sphericity, the Kaiser–Meyer–Olkin (KMO) index and the determinant of the matrix ($p < .001$). Based on the obtained indicators of sample adequacy, a factor analysis was performed. A principal component analysis with orthogonal rotation was performed to maximize the variance (Varimax). To determine the number of factors, a scree plot analysis was performed. A four-factor solution appeared to be clear and unambiguously interpretable. After excluding items based on their component loading and redundancy, the measure was pared down to 12 items (see the Appendix). Each factor comprised three items. All selected items had loadings of .67 or higher. The component loadings of the selected items and the respective Cronbach's values of the factors are displayed in Table 1.

All four factors (dimensions) together accounted for 76.43% of the total variance. They were labeled as follows: I. New challenges and an increase in professional competences, II. Increase in spiritual experiences and a greater sense of responsibility for others, III. Greater confidence in oneself and appreciating life, IV. Increased acceptance and actions for others. The first factor, i.e. changes connected with new challenges and an increase of professional competences, explains more total variance than all three other factors (48%). Similarly, Factor 2 (Increase in spiritual experiences and a greater sense of responsibility) explains as much variance as Factors 3 and 4 taken together (14%).

The results from a separate sample of participants ($N = 200$) were used for the confirmatory factor analysis (CFA). Considering the most popular fit indices, i.e., $\chi^2(48) = 90.79$, $p < .001$; confirmatory fit index (CFI) = .983; root mean square error of approximation (RMSEA) = .068 (confidence interval [CI] .047–.089; goodness of fit index [GFI] = .928 and adjusted goodness of fit index [AGFI] = .883), the model can be considered as relatively well fitted. In other words, the model allowed the reconstruction of the observable correlation matrix.

Table 1

Factor Loadings of Final 12 Items and Internal Consistency of SPTGI in the Sample

SPTG dimensions and items	Factor loading				
	I	II	II	IV	α
I: New challenges and an increase in professional competences (48.04% of total variance)					
4. I set myself new challenges more often	**.69**	.22	.07	.36	
8. I react more calmly to painful events	**.79**	.11	.28	.08	
12. I better develop my professional skills	**.71**	-.08	.20	.26	
Internal consistency					.71
II: Increase in spiritual experiences and a greater sense of responsibility for others (14.15% of total variance)					
2. My confidence in Divine Providence/Higer Being has increased	.05	**.88**	.24	.12	
6. I have become more religious	.07	**.93**	.14	.04	
10. I have a greater sense of responsibility for others' suffering	.11	**.72**	.17	.35	
Internal consistency					.87
III: Greater confidence in oneself and appreciating life (7.66% of total variance)					
3. I have more confidence in myself	.27	.26	**.79**	.22	
7. I have become a more mature person	.24	.20	**.81**	.30	
11. I appreciate the value of life more	.15	.19	**.81**	.29	
Internal consistency					.89
IV: Increased acceptance and actions for others (6.58% of total variance)					
1. I have learned to accept others more	.29	.11	.35	**.69**	
5. Acting for the benefit of others has become a very important goal in my life	.19	.16	.32	**.83**	
9. I get more pleasure from what I do	.29	.22	.20	**.76**	
Internal consistency					.83

Reliability and Validity of the SPTGI

The internal consistency (assessed by Cronbach's α) of the total SPTGI score was .90. Although the scores of the individual scales in the SPTGI have only three items each, their internal reliability coefficients were at good levels (.71, .85, .89, 87, respectively). Mean item–total correlations were very satisfactory, $r > .44$.

The two-month test–retest stability for the group of professional social workers ($N = 20$, $r = .78$) ($p < .001$) confirms the high stability of the test.

The theoretical validity of the inventory was estimated by comparing SPTGI scores with other measures which should be associated with secondary positive posttraumatic changes. A positive relationship was expected with the following items: posttraumatic changes measured by the PTGI-SF, positive coping strategies measured by the CPOTS, empathy assessed with the EES, especially its cognitive aspect, and secondary traumatic stress measured by the PCL-5. Pearson's correlation coefficients between the analyzed variables are shown in Table 2.

Table 2

Sample Sum Scores on Measures of Variables and Correlations Between SPTGI Dimensions and Total Scores in Relation to the Variables Measures

Variables			SPTGI dimensions				Total SPTG
	N	*M*(*SD*)	I	II	III	IV	
PTGI-SF	65	29.5(10.66)	.24	.50***	.47***	.47***	.57***
Coping strategies:							
Downward comparison	500	7.04(4.44)	.01	.20***	.11*	.05	.12**
Cognitive restructuring	500	7.62(4.14)	.22***	.31***	.26***	.27***	.34***
Resolution/acceptance	500	12.95(4.92)	.30***	.22***	.30***	.25***	.34***
Regret	500	5.29(4.08)	-.00	.19***	.05	.05	.10*
Denial	500	6.25(4.87)	-.08	.26***	-.01	-.01	.07
Empathic dimensions:							
Empathic concern	165	31.87(4.82)	.05	.26***	.29***	.28***	.29***
Personal distress	165	20.25(4.93)	-.15*	.16*	.04	-.04	.01
Perspective taking	165	28.94(4.02)	.21**	.17*	.31***	.29***	.32***
STSI	500	24.14(16.1)	.14**	.27***	.14**	.13**	.22***

Note. I. New challenges and an increase in professional competences, II. Increase in spiritual experiences and a greater sense of responsibility for others, III. Greater confidence in oneself and appreciating life, IV. Increased acceptance and actions for others.
* < .05, ** < .01, *** < .001.

As expected, a statistically significant but moderate correlation was observed between SPTGI and PTGI-SF ($N = 65$, $r = .57$). A positive correlation was found between the three factors (Factors II, III, IV) of the SPTGI. Secondary posttraumatic growth positively correlated with such adaptive cognitive strategies as positive Cognitive restructuring and Resolution/acceptance, but poorly so with maladaptive ones, mainly Regret. Denial is related only to Dimension 2 of the SPTGI. Both the

total SPTG score and those of its dimensions (without Dimension 1, New challenges and an increase in professional competences) correlate with perspective taking, i.e., the cognitive aspect of empathy, which is the expression of understanding. Empathetic concern, i.e. the tendency to become infected with other people's emotions, demonstrates a similar correlation. However, no relationship was found between secondary growth and Personal distress, which measures the tendencies to experience fear, anxiety, distress, or discomfort in response to the severe negative experience (suffering) of other people. Our findings indicate that STS is significantly associated with all the components of secondary growth, especially with an increase in spiritual experiences and a greater sense of responsibility for others ($r = .27$, $p < .001$) (Table 2).

Based on our findings regarding the internal structure of the SPTGI, and the various indicators of both convergent and divergent validity, the inventory appears to demonstrate sufficient accuracy.

Prevalence of Secondary Posttraumatic Growth Among Professionals Working With Trauma Victims

The normative data derived from several occupational groups exposed to secondary traumatization are presented in Table 3. The distributions of the results of secondary posttraumatic growth are symmetrical, mesokurtic, and thus meet the parameters of normality.

Table 3

Descriptive Data for SPTGI Dimensions and Total Scores

SPTGI	*M*	*SD*	Min–Max	Skewness	Kurtosis
I. New challenges and an increase in professional competences	7.83	3.29	.00–15.00	–.23	–.39
II. Increase in spiritual experiences and a greater sense of responsibility for others	5.74	4.22	.00–15.00	.27	–1.00
III. Greater confidence in oneself and appreciating life	9.29	4.01	.00–15.00	–.72	–.28
IV. Increased acceptance and actions for others	8.20	3.82	.00–15.00	–.40	–.61
Total SPTGI	31.06	12.14	.00–59.00	–.48	–.35

The largest changes were observed for *greater confidence in oneself* and *appreciating life*. In turn, the smallest changes were found for *increase in spiritual experiences* and *a greater sense of responsibility for others*. In the last dimension, the results are most widely scattered around the mean.

Table 4 compares the intensity of positive posttraumatic changes in various professional groups exposed to secondary traumatization. Post hoc ANOVA analyses were conducted to compare the degree of posttraumatic growth among the studied groups with regard to dimension-specific and total scores (Table 4). The difference in SPTGI between the professional groups is minor. The greatest changes were observed for therapists and nursing staff, and the smallest for social workers ($p < .05$). The group of therapists, in comparison with the others, recorded the greatest changes in Dimension I (New challenges and an increase in professional competences) and Dimension IV (Increased acceptance and actions for others). In addition, the therapist group demonstrated the smallest changes in Dimension II, i.e., no major changes in *spiritual experiences and a sense of responsibility for others* ($p < .001$). The remaining professional groups did not differ from each other with regard to growth changes.

Table 4

Secondary Posttraumatic Growth—Comparison of Results in Studied Groups

	SPTGI total score		SPTG dimensions							
			I		II		III		IV	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Therapists ($N = 80$)	33.40	12.70	9.09	3.47	4.38	4.18	10.10	3.96	9.80	4.17
Paramedics ($N = 120$)	30.70	12.70	7.33	3.34	7.12	3.84	8.53	3.86	7.77	3.74
Nurses ($N = 65$)	33.90	10.50	8.32	2.93	7.31	4.42	9.51	3.28	8.74	3.13
Social workers ($N = 95$)	28.50	11.80	6.82	3.24	5.23	3.96	9.29	4.27	7.17	3.73
Probation officers ($N = 140$)	30.40	11.90	7.99	3.09	4.97	4.13	9.35	4.21	8.09	3.75
	$F = 2.83$ $p < .05$ 1, 3 > 4		$F = 6.58$ $p < .001$ 1 > 2, 4, 5		$F = 9.67$ $p < .001$ 2, 3 > 1, 4–5		$F = 2.07$ Ns		$F = 6.24$ $p < .001$ 1 > 2, 4, 5	

Note. I. New challenges and an increase in professional competences, II. Increase in spiritual experiences and a greater sense of responsibility for others, III. Greater confidence in oneself and appreciating life, IV. Increased acceptance and actions for others.

Socio-demographic variables differentiate the positive effects of secondary exposure to trauma to a relatively small extent ($p < .05$). Women ($M = 31.73$, $SD = 11.84$) show greater changes than men ($M = 28.89$, $SD = 12.90$), and likewise older participants ($M = 32.15$, $SD = 11.52$) compared to younger ones ($M = 29.85$, $SD = 12.70$). These changes mostly concern increased confidence in oneself and appreciating life. Significantly higher scores were obtained by people who had not suffered personal trauma ($M = 32.69$, $SD = 12.32$) compared to those who had experienced personal trauma ($M = 26.59$, $SD = 12.83$, $p < .01$). This applies to all dimensions of growth, with the exception of *growth of spiritual experiences* and a *greater responsibility for others*. On the other hand, seniority and the degree of workload did not appear to differentiate the severity of secondary positive post-traumatic changes.

Higher scores of SPTGI were associated with more positive changes. Their level can be assessed by referring the obtained result to the mean result presented in Table 4. Assuming a theoretical distribution of 0–60 points, the mean overall SPTGI result ($n = 31.06$) was 51.8% of the maximum score. Dividing the obtained results by the total number of statements, i.e. 12 for the overall score and 3 for each of the 4 dimensions of secondary growth, then the results can be directly related to the measuring scale used in the inventory (from 0 = *I have not experienced this change at all* to 5 = *I have experienced this change to a very great degree*).

To determine the level of changes in the assessment of secondary posttraumatic growth, the raw scores obtained during the study of the five different occupational groups exposed to secondary traumatization were transformed into sten scores. As slight differences existed with regard to age and gender, common norms were calculated on the sten scale (Table 5).

Table 5

SPTGI: Contemporary Norms (N = 500)

Sten	Raw score	%
10	51–60	2.4
9	47–50	5.8
8	44–46	8.4
7	38–43	17.0
6	33–37	17.0
5	25–32	19.8
4	18–24	15.0
3	10–17	9.2
2	4–9	3.6
1	0–3	1.8

Scores in the 5–6 sten range were assumed as moderate, 1–4 low, and 7–10 high. Thus, the score of 38, i.e., the lower limit of 7 sten, could be taken as the cut-off point: this value indicates the occurrence of growth changes following secondary exposure to trauma. Based on the adopted thresholds, a diagnosis of secondary posttraumatic growth can be assigned to 33.6% of the respondents. Both the therapist and nursing groups are characterized by a high level of secondary growth after trauma, while social workers and paramedics demonstrate the lowest rates of secondary growth.

DISCUSSION

The SPTGI is a new instrument which can be used in the assessment of secondary positive posttraumatic changes among people exposed to secondary trauma. The instrument may support professionals working with trauma victims, especially those who are at high risk of adverse outcomes, e.g. people employed in crisis intervention, including therapists, psychiatrists, social workers, and medical personnel. The SPTGI can also be used in clinical practice, especially with people undergoing various types of therapeutic interventions. It is worth noting that the SPTG phenomenon may apply not only to professionals but also to persons who have lost a loved one or witnessed them suffering, as well as people coping with life-threatening diseases.

The developed tool confirms the concept of PTG (Tedeschi & Calhoun, 1996, 2004), and its four component dimensions accurately reflect possible positive posttraumatic changes among professionals exposed to secondary trauma. The SPTGI can be a good alternative to PTGI which is commonly used in research on secondary posttraumatic growth. Both tools share common elements, such as new challenges/possibilities, appreciation of life or spiritual changes, which seem to be universal in nature, regardless of whether they relate to posttraumatic changes following direct or indirect trauma. However, the SPTGI takes into account a slightly broader and slightly different spectrum of positive posttraumatic changes which mainly concern an increase in professional competences, greater sense of responsibility for others, or increased acceptance and actions for others.

It should be emphasized that the issue of secondary growth after trauma still requires research and its nature remains surrounded by numerous questions and doubts. It is still unknown to what degree the occurrence of secondary positive posttraumatic changes is influenced by the number of cases, the type of trauma experienced by the client, the intensity of the trauma and the time elapsed since the events experienced by clients. It is also not clear how to treat secondary growth after trauma: whether

it should be regarded in dichotomous terms, that is, as the presence or absence of a phenomenon, or rather as Tedeschi and Calhoun (1996, 2004) postulate in the PTG concept, it should rather be considered in terms of severity.

Further exploration is required to determine the role of cognitive processing of trauma, including the importance of ruminating about experienced events or the readiness to change beliefs. It would also be worth considering the role of behavioral remedial strategies such as self-care practices. Further research should also assess secondary posttraumatic growth in other groups of professionals helping trauma victims, such as psychiatrists or police officers, especially those working with victims of violence.

Our research has a number of limitations. Most importantly, the study was of a cross-sectional nature, and the group of participants was not evenly distributed between the genders, i.e. the women significantly dominated. Longitudinal studies would be desirable to identify changes in SPTG intensity over time, and cross-cultural research is needed to better confirm the structure of SPTGI.

CONCLUSIONS

The SPTGI consists of the emergence of new challenges and an increase in professional competences, increase in spiritual experiences and greater responsibility for others, greater self-confidence, and appreciation of life, as well as increased acceptance and actions for others. Such desired changes should be promoted and supported following trauma.

The SPTGI is a reliable and valid instrument to measure secondary positive posttraumatic changes among professionals exposed to secondary trauma. It can be useful in scientific research and in clinical practice.

CRediT Author Statement

Nina Ogińska-Bulik (50%): conceptualization, methodology, software, validation, formal analysis, resources, writing (original draft, review and editing).

Zygfryd Juczyński (50%): conceptualization, methodology, software, validation, formal analysis, resources, writing (original draft), writing (review and editing).

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APPENDIX

SECONDARY POSTTRAUMATIC GROWTH INVENTORY (SPTGI) (Translation)

Helpers supporting or accompanying trauma victims are indirectly exposed to it themselves. This type of exposure may lead to stress-induced changes, typically negative, but also positive, consisting in greater appreciation of one's life, noticing new opportunities, etc.

First, answer some general questions:

Gender: M F
Age: .....
I mainly help: children adolescents adults

The most common traumatic events: ……
……
……

I been helping for …….. years
I help for …… hours (daily or weekly)

Read each statement and mark the degree of changes experienced in your work with people who have been exposed to traumatic events by circling one of the numbers on the right. The individual numbers indicate:

0 = I have not experienced this change
1 = I have experienced this change to a very small degree as a result of my crisis
2 = I have experienced this change to a small degree
3 = I have experienced this change to a moderate degree
4 = I have experienced this change to a great degree
5 = I have experienced this change to a very great degree

1.	I have learned to accept others more	0	1	2	3	4	5
2.	My confidence in Divine Providence/Higher Being has increased	0	1	2	3	4	5
3.	I have more confidence in myself	0	1	2	3	4	5
4.	I set myself new challenges more often	0	1	2	3	4	5
5.	Acting for the benefit of others has become a very important goal in my life	0	1	2	3	4	5
6.	I have become more religious	0	1	2	3	4	5
7.	I have become a more mature person	0	1	2	3	4	5
8.	I react more calmly to painful events	0	1	2	3	4	5
9.	I get more pleasure from what I do	0	1	2	3	4	5
10.	I have a greater sense of responsibility for others' suffering	0	1	2	3	4	5
11.	I appreciate the value of life more	0	1	2	3	4	5
12.	I better develop my professional skills	0	1	2	3	4	5

INWENTARZ ZASTĘPCZEGO WZROSTU PO TRAUMIE (IZWT)
(wersja oryginalna)

Pomagający, wspierający czy towarzyszący ofiarom traumy sami są narażeni na jej doświadczenie w sposób pośredni. Tego typu narażenie może prowadzić do pojawienia się zmian wynikających ze stresu, najczęściej negatywnych, ale i pozytywnych, polegających na większym docenianiu swojego życia, dostrzeganiu nowych możliwości, itp.

Najpierw proszę odpowiedzieć na kilka ogólnych pytań:

Płeć (zaznaczyć): K M
Wiek (wpisać): .....
Głównie pomagam (zaznaczyć): dzieciom – młodzieży – dorosłym

Najczęstsze wydarzenia traumatyczne (wpisać): ……
……
……

Od jak dawna pomagam (w latach): ……..
Jak często, ile godzin (dziennie lub tygodniowo): …….

Należy przeczytać każde stwierdzenie i zaznaczyć stopień zmian doświadczonych w związku z pracą z osobami, które były narażone na zdarzenia traumatyczne, otaczając kółkiem jedną z cyfr podanych z prawej strony. Poszczególne cyfry oznaczają:

0 = wcale nie doświadczyłem/łam tej zmiany
1 = doświadczyłem/łam tej zmiany w bardzo małym stopniu
2 = doświadczyłem/łam tej zmiany w małym stopniu
3 = doświadczyłem/łam tej zmiany w średnim stopniu
4 = doświadczyłem/łam tej zmiany w dużym stopniu
5 = doświadczyłem/łam tej zmiany w bardzo dużym stopniu

1.	Nauczyłem/łam się bardziej akceptować innych	0	1	2	3	4	5
2.	Wzrosło moje zaufanie do wyroków Opatrzności Boskiej/wyższej Istoty	0	1	2	3	4	5
3.	Mam większe zaufanie do siebie	0	1	2	3	4	5
4.	Częściej stawiam sobie nowe wyzwania	0	1	2	3	4	5
5.	Działanie na rzecz innych stało się bardzo ważnym celem mojego życia	0	1	2	3	4	5
6.	Stałem/łam się bardziej wierzący/a	0	1	2	3	4	5
7.	Stałem/łam się bardziej dojrzałym człowiekiem	0	1	2	3	4	5
8.	Z większym spokojem reaguję na bolesne wydarzenia	0	1	2	3	4	5
9.	Czerpię więcej przyjemności z tego, co robię	0	1	2	3	4	5
10.	Mam większe poczucie odpowiedzialności za cierpienia innych	0	1	2	3	4	5
11.	Bardziej doceniam wartość życia	0	1	2	3	4	5
12.	W większym stopniu rozwijam swoje kompetencje zawodowe	0	1	2	3	4	5