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Stress and Coherence as an Opportunity for Change

Stres i koherencja jako szansa na zmianę

ABSTRACT

Stress resulting from trauma is typically viewed as having negative consequences. However, this article argues that such outcomes are not exclusively negative. One possible consequence of trauma-related stress is posttraumatic growth, understood as a positive transformation within the individual. In her study, the author assumed that certain personality traits are necessary for such change to occur and therefore posed the following research question: What is the relationship between sense of coherence and the coping strategies used to manage stress?

The study focused on sense of coherence and coping strategies in a group of 36 part-time pedagogy students. The findings confirmed, among other things, that positive reinterpretation and growth, a strategy associated with posttraumatic growth, positively correlated with sense of coherence, particularly with its comprehensibility component.

ABSTRAKT

Stres wynikający z traumy jest zazwyczaj postrzegany jako zjawisko prowadzące do negatywnych konsekwencji. Niniejszy artykuł ukazuje, że skutki stresu nie muszą być wyłącznie negatywne. Jedną z możliwych konsekwencji stresu związanego z traumą jest rozwój

KEYWORDS

change, stress,
sense of coherence,
coping strategies,
posttraumatic growth

SŁOWA KLUCZOWE

zmiana, stres,
koherencja, strategie
radzenia sobie ze
stresem, rozwój
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potraumatyczny, rozumiany jako pozytywna transformacja jednostki. W swoich badaniach autorka założyła, że pewne cechy osobowości są niezbędne do zajęcia takiej zmiany i dlatego postawiła następujące pytanie badawcze: Jakie są korelacje między poczuciem koherencji a strategiami radzenia sobie ze stresem?

Badanie koncentrowało się na koherencji i strategiach radzenia sobie w grupie 36 osób studiujących niestacjonarnie pedagogikę. Wyniki potwierdziły między innymi, że pozytywna reinterpretacja i rozwój, będące strategią związaną z rozwojem potraumatycznym, korelują dodatnio ze koherencją, a w szczególności z jednym jej komponentem, jakim jest zrozumiałość.

Introduction

Stress inevitably brings change into human life, even when it is associated with positive events. Stress resulting from negative events, however, is typically linked to adverse consequences. This article seeks to demonstrate that this is not always the case. Theories of posttraumatic growth and sense of coherence as psychological resources for coping with stress provide grounds for optimism.

Posttraumatic growth, stress, and coherence as individual resources

Trauma is most often viewed as entirely negative. Stress, by contrast, is generally understood as something that can arise from both positive and negative experiences. Trauma is usually associated with the latter—stress that is harmful or overwhelming. Yet even trauma has the potential to foster positive change.

The concept of posttraumatic growth was first introduced in the literature by Richard Tedeschi and Lawrence Calhoun (Tedeschi et al. 2018). Drawing on insights from philosophy, theology, and psychology, they developed a perspective that conceptualizes growth as a possible outcome of trauma (Tedeschi, Calhoun 1995). Importantly, Tedeschi and Calhoun emphasized that posttraumatic growth does not arise directly from trauma itself but from the coping strategies individuals use in response to it. Such growth goes beyond a simple return to baseline functioning and reflects the attainment of a higher

level of functioning than before the traumatic experience (Ogińska-Bulik 2013a).

Nina Ogińska-Bulik has conducted extensive research on post-traumatic growth. Building on the work of the concept's originators, she observed that most researchers estimate that between 30% and 90% of trauma survivors experience some degree of posttraumatic growth (Ogińska-Bulik 2013b). The extent of this growth is influenced by both the type and duration of the trauma.

Posttraumatic growth has also been linked to certain sociodemographic factors (Ogińska-Bulik 2013a). For example, in a study of 730 individuals of varying ages and genders, Ogińska-Bulik found that gender strongly influenced the intensity of positive changes—women experienced such changes more intensely than men—while age showed only weak associations. Other studies, however, have yielded different results. Research involving 165 adolescents found no significant relationship between gender, age, or type of trauma and the level of posttraumatic growth (Ogińska-Bulik 2010).

Positive changes resulting from trauma may take many forms (Ogińska-Bulik 2014). Studies in positive psychology suggest that trauma survivors may experience improved self-perception, deeper interpersonal relationships, a greater appreciation of life, and spiritual transformation. Among young people, such outcomes may include increased resilience, emotional maturity, greater understanding of others, increased empathy and compassion, and a deeper understanding of personal values, purpose, and meaning in life.

Posttraumatic growth can occur even after the most severe traumatic experiences. For example, in a study of 76 bereaved parents, despite the magnitude of their trauma, participants reported positive changes: 29% demonstrated low levels, 41% moderate levels, and 30% high levels of posttraumatic growth (Ogińska-Bulik 2017). Similar findings have been reported among parents of children with disabilities and neurodevelopmental disorders, including autism (Buchholz, Wolan-Nowakowska 2020). Growth has also been documented among adolescents who survived traffic accidents, with the strongest associations observed for intrusive experiences, appreciation of life, and changes in self-perception (Ogińska-Bulik 2014).

The concept of posttraumatic growth resonates with earlier perspectives advanced by Gerald Caplan and Viktor Frankl and later

developed by Kazimierz Popielski (Ogińska-Bulik 2013a). These scholars emphasized that highly stressful and painful events may generate not only negative outcomes but also positive psychological change. Posttraumatic growth coexists with the negative symptoms associated with trauma. The relationship between these variables has been examined in international studies conducted in Australia, Germany, Italy, Japan, Nepal, Peru, Poland, Portugal, Turkey, and the United States (Taku et al. 2021).

Posttraumatic growth has been explored in five domains: an increased sense of personal strength or autonomy; improved quality of relationships characterized by greater compassion and connectedness; the discovery of new life paths that might not have been pursued without adversity; a heightened appreciation of life; and spiritual or existential change, often accompanied by deeper philosophical reflection. These five domains have been validated in quantitative and analytic studies.

Posttraumatic growth is a positive change that emerges as a result of trauma and the stress associated with it. The question remains, however, whether it always occurs and whether such change can consistently be expected. Stress is experienced differently by different individuals. Several approaches to understanding stress can be found in the literature (Juczyński, Ogińska-Bulik 2012). It can be conceptualized as a stimulus that induces tension, as a reaction to stressors, or as a transactional process between the individual and the environment. The transactional perspective has gained the greatest recognition in psychology, as it emphasizes the role of subjective appraisal.

Coping strategies, such as active coping, planning, seeking instrumental social support, seeking emotional social support, suppression of competing activities, turning to religion, positive reinterpretation and growth, restraint coping, acceptance, focusing on and venting emotions, denial, mental disengagement, behavioral disengagement, substance use, and humor, are central to this appraisal process. These strategies formed the foundation for the development of instruments assessing stress coping. Coping may therefore be associated with growth; however, the circumstances under which this occurs and the personality factors that may influence it remain open questions.

In examining theories of human health, Aaron Antonovsky positioned his salutogenic framework in contrast to pathogenic

approaches that emphasize a dichotomy between health and illness. He argued that individuals exist along a continuum between health and illness (Antonovsky 1987). Movement along this continuum, toward either health or illness, depends on one's resilience in the face of stressors. According to Antonovsky, stressors are not comparable to pathogens but instead represent challenges that can be successfully confronted only by those with sufficient resilience.

Antonovsky's research on Israeli women adapting to menopause led him to develop the theory of the sense of coherence (Antonovsky 1987). He observed that 51% of women in a control group and 29% of Holocaust survivors maintained good health, raising the question not of why some were ill, but of why others remained well despite adversity. This inquiry led to the concept of generalized resistance resources, which later evolved into the notion of the sense of coherence. Early studies of 51 trauma survivors in Israel (30 men and 21 women) contributed to the development of the Sense of Coherence Scale.

Antonovsky defined the sense of coherence as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement" (Antonovsky 1987: 19).

In other words, individuals perceive stimuli from their internal and external environments as predictable, orderly, coherent, structured, and clear rather than chaotic, random, accidental, or incomprehensible. In this view, no distinction is made between positive and negative stimuli. Within this definition, three components can be identified.

The first is comprehensibility: the perception that stimuli are structured and intelligible. The second is manageability, defined as "the extent to which one perceives that resources are at one's disposal that are adequate to meet the demands posed by the stimuli that bombard one" (Antonovsky 1987: 17). Individuals with a strong sense of manageability do not feel that life treats them unfairly (Antonovsky 1987) and are able to cope with problems as they arise.

The third component of coherence is meaningfulness, which reflects the motivational dimension. Individuals with a strong sense of meaningfulness perceive life events as challenges worthy of engagement. These three components are inseparably interconnected. Comprehensibility is closely linked to manageability, since it is difficult to use available resources without perceiving the world as intelligible. Meaningfulness serves as a motivational force: when it is strong, individuals strive to strengthen both comprehensibility and manageability. Conversely, when meaningfulness is weak, it undermines the other components. Even individuals with low comprehensibility and manageability, provided they possess a strong sense of meaningfulness, will be motivated to deepen their understanding of the world and enhance their capacity to cope with it.

Antonovsky also distinguished between strong coherence and rigid, defensive coherence, the latter characterizing individuals who behave as though everything they encounter in the world is fully comprehensible. Ultimately, coherence may help explain why trauma can result not only in posttraumatic stress disorder but also in posttraumatic growth.

Methodology

The research question formulated by the author was: What is the relationship between sense of coherence and coping strategies for dealing with stress? Based on the existing literature and Aaron Antonovsky's work, it was assumed that individuals with a high level of coherence would cope with stress actively, seek meaning, and positively reinterpret their life experiences.

The study sample consisted of 36 pedagogy students (32 women and 4 men). Because the number of men was small, gender was not treated as a variable. The average age was 37 years, with a range of 25 to 49. Participants were purposefully selected from among part-time pedagogy students. The study did not examine whether participants had experienced trauma; rather, it focused on their stress-coping strategies and on the likelihood that they would perceive stress more as a challenge than as a threat. In such cases, life traumas may become a source of hope for posttraumatic growth.

The study was conducted using the survey method (Babbie 2021), with a questionnaire as the research instrument. The instruments employed were the Sense of Coherence Questionnaire (SOC-29) and the COPE (Coping Orientation to Problems Experienced) Inventory. The SOC-29 consists of 29 items and was first published in 1983 (Antonovsky 1987). Its reliability, measured using Cronbach's alpha, ranges from .84 to .93. The first subscale, comprehensibility, includes 11 items; the second, manageability, includes 10 items; and the third, meaningfulness, includes 8 items. Each item is rated on a 7-point scale (from never having this feeling to always having this feeling).

The COPE Inventory includes 15 subscales that measure coping strategies: active coping, planning, seeking instrumental social support, seeking emotional social support, suppression of competing activities, turning to religion, positive reinterpretation and growth, restraint coping, acceptance, focusing on and venting of emotions, denial, mental disengagement, behavioral disengagement, substance use, and humor (Juczyński, Ogińska-Bulik 2012). The questionnaire consists of 60 items, each rated on a 4-point scale (from *I usually don't do this at all* to *I usually do this a lot*). Cronbach's alpha coefficients for the subscales range from .48 to .89. The inventory was developed by Charles Carver and colleagues and adapted into Polish by Zygryd Juczyński and Nina Ogińska-Bulik. Raw scores were used in the present study.

The study was conducted in 2020 as part of coursework on coping with trauma. The participating students provided written consent for the anonymous use of their data for scientific purposes.

Coherence and stress in the author's research

To assess the normality of the variable distributions, the Shapiro–Wilk test was applied. Only the planning subscale followed a normal distribution. Table 1 presents the results of the normality tests.

Table 1. Results of the Shapiro–Wilk normality tests

Variable	Normality tests (results)		
	N	W	p
Active coping	36	0.898	0.003
Planning	36	0.943	0.064
Seeking instrumental social support	36	0.892	0.002
Seeking emotional social support	36	0.841	0.000
Suppression of competing activities	36	0.911	0.007
Turning to religion	36	0.771	0.000
Positive reinterpretation and growth	36	0.874	0.001
Restraint coping	36	0.866	0.000
Acceptance	36	0.667	0.000
Focus on and venting of emotions	36	0.895	0.003
Denial	36	0.930	0.025
Mental disengagement	36	0.836	0.000
Behavioral disengagement	36	0.813	0.000
Substance Use (Alcohol/Drugs)	36	0.714	0.000
Humor	36	0.904	0.004
Comprehensibility	36	0.897	0.003
Manageability	36	0.917	0.010
Meaningfulness	36	0.882	0.001
Coherence	36	0.894	0.002

Source: Author's own study.

Spearman's rho nonparametric test was used to calculate correlations between the components of coherence (comprehensibility, manageability, and meaningfulness) and coping strategies (active coping, planning, seeking instrumental social support, seeking emotional social support, suppression of competing activities, turning to religion, positive reinterpretation and growth, restraint coping, acceptance, focusing on and venting of emotions, denial, mental disengagement, behavioral disengagement, substance use, and humor). Table 2 presents the correlations.

Table 2. Correlations between coping strategies and the components of coherence (statistically significant correlations in red, $p < .05$)

Coping strategies	Comprehensibility	Manageability	Meaningfulness	Sense of coherence
Active coping	0.77	-0.03	0.37	0.67
Planning	0.98	-0.12	0.61	0.86
Seeking instrumental social support	0.01	0.27	0.41	0.32
Seeking emotional social support	-0.14	0.12	0.30	0.15
Suppression of competing activities	0.72	0.05	0.31	0.70
Turning to religion	0.21	-0.68	0.16	-0.04
Positive reinterpretation and growth	0.49	-0.47	0.06	0.35
Restraint coping	-0.26	-0.02	-0.24	-0.14
Acceptance	0.84	-0.05	0.29	0.72
Focus on and venting of emotions	0.04	0.35	0.63	0.34
Denial	-0.53	0.14	-0.07	-0.45
Mental disengagement	-0.76	-0.17	-0.33	-0.70
Behavioral disengagement	-0.75	-0.09	-0.40	-0.70
Substance Use (Alcohol/Drugs)	-0.08	-0.39	-0.03	-0.19
Humor	0.25	-0.26	-0.06	0.09

Source: Author's own study.

The results indicate that overall coherence was positively and significantly correlated with active coping ($\rho = .67$), planning ($\rho = .86$), suppression of competing activities ($\rho = .70$), positive reinterpretation and growth ($\rho = .35$), acceptance ($\rho = .72$), and focusing on and venting of emotions ($\rho = .34$). Significant negative correlations were found with denial ($\rho = -.45$), mental disengagement ($\rho = -.70$), and behavioral disengagement ($\rho = -.70$). Active coping was also positively correlated with comprehensibility ($\rho = .77$) and meaningfulness ($\rho = .37$). Planning was positively correlated with comprehensibility ($\rho = .98$) and meaningfulness ($\rho = .61$). Seeking instrumental social

support was positively correlated with meaningfulness ($\rho = .41$), while suppression of competing activities was positively correlated with comprehensibility ($\rho = .72$). Positive reinterpretation and growth was positively correlated with comprehensibility ($\rho = .49$). Similarly, acceptance was positively correlated with comprehensibility ($\rho = .84$). Focusing on and venting of emotions was positively correlated with manageability ($\rho = .35$) and meaningfulness ($\rho = .63$). Notably, manageability showed significant negative correlations with turning to religion ($\rho = -.68$) and positive reinterpretation and growth ($\rho = -.47$). Other significant negative correlations included denial with comprehensibility ($\rho = -.53$), mental disengagement with comprehensibility ($\rho = -.86$) and meaningfulness ($\rho = -.33$), behavioral disengagement with comprehensibility ($\rho = -.75$) and meaningfulness ($\rho = -.40$), and substance use with manageability ($\rho = -.39$).

It is noteworthy that manageability, defined as the belief that one has sufficient resources to cope with stressors, showed the most divergent pattern of correlations, including negative associations with both turning to religion and positive reinterpretation and growth. In particular, although positive reinterpretation and growth was positively correlated with comprehensibility and meaningfulness, it was negatively correlated with manageability. This finding suggests that manageability may function somewhat differently from the other components of coherence. In addition to positive reinterpretation and growth, other active coping strategies associated with posttraumatic growth include turning to religion, active coping, acceptance, and humor. Active coping was positively correlated with comprehensibility and meaningfulness, while acceptance was positively correlated with comprehensibility. Additional insights emerged from a regression analysis conducted to examine which components of coherence predict coping strategies associated with positive posttraumatic growth. According to the results, 49% of the variance in active coping was explained by comprehensibility ($p = .01$), 39% by manageability ($p = .31$; not statistically significant), and 62% by meaningfulness ($p = .02$). The regression model for active coping is expressed as follows:

$$\text{Active coping} = 0.18 \times \text{comprehensibility} + 0.03 \times \text{manageability} - 0.20 \times \text{meaningfulness} + 8.14.$$

Because only the coefficient for comprehensibility aligns in direction with the corresponding correlation, this suggests that the relationship between active coping and the components of coherence may not be linear. Further analyses using a larger sample are needed to assess this relationship more robustly.

Further analysis indicated that 49% of the variance in turning to religion was explained by comprehensibility ($p = .84$; not statistically significant), 39% by manageability ($p = .01$), and 62% by meaningfulness ($p = .01$). The regression equation for turning to religion is as follows:

$$\text{Turning to religion} = -0.01 \times \text{comprehensibility} - 0.69 \times \text{manageability} + 0.74 \times \text{meaningfulness} + 17.22.$$

In this case, manageability was negatively correlated with turning to religion, and this was the only statistically significant relationship. Because the regression results point in the same direction, the relationship can be considered approximately linear for the statistically significant predictor.

In the next stage of the analysis, 49% of the variance in positive reinterpretation and growth was explained by comprehensibility ($p = .01$), 39% by manageability ($p = .01$), and 62% by meaningfulness ($p = .69$; not statistically significant). The regression equation for positive reinterpretation and growth is:

$$\text{Positive reinterpretation and growth} = 0.24 \times \text{comprehensibility} - 0.25 \times \text{manageability} - 0.09 \times \text{meaningfulness} + 14.19.$$

For statistically significant results, the direction of the relationship was consistent with the correlation findings, which suggests that in these cases the relationship can be considered approximately linear.

Further analysis indicated that 49% of the variance in acceptance was explained by comprehensibility ($p = .01$), 39% by manageability ($p = .55$; not statistically significant), and 62% by meaningfulness ($p = .01$). The regression equation for acceptance is:

$$\text{Acceptance} = 1.33 \times \text{comprehensibility} + 0.02 \times \text{manageability} - 0.55 \times \text{meaningfulness} + 12.53.$$

Here, only the relationship between comprehensibility and acceptance was positive in both the regression and correlation analyses. This suggests that the relationship between meaningfulness and acceptance may be nonlinear. A more comprehensive examination of this relationship should be undertaken in future research with larger samples.

A regression analysis conducted with humor as the dependent variable and the components of coherence as independent variables yielded no statistically significant results.

Because the findings were not entirely conclusive, it may be assumed that other variables mediate the relationship between coping strategies associated with posttraumatic growth and the components of coherence. One possible mediator is participants' age. To examine this possibility, age was introduced as a weighting variable in the correlation analysis between coping strategies associated with posttraumatic growth and the components of coherence. The direction of the relationships did not change, but their strength did. The results are presented in Table 3.

Table 3. Spearman's rank-order correlations between components of sense of coherence and coping strategies associated with post-traumatic growth

Variable	Spearman's rank-order correlations (results), with pairwise deletion of missing data. Marked correlation coefficients are significant at $p < .05000$			
	Comprehensibility	Manageability	Meaningfulness	Sense of coherence
Active coping	0.64	0.02	0.23	0.54
Turning to religion	0.22	-0.69	0.19	0.03
Positive reinterpretation and growth	0.61	-0.49	0.21	0.47
Acceptance	0.81	0.01	0.33	0.74
Humor	0.38	-0.33	0.10	0.22

Source: Author's own study.

With age included as a weighting factor, statistically significant correlations decreased between:

- comprehensibility and active coping/acceptance,
- manageability and turning to religion/positive reinterpretation and growth,
- meaningfulness and active coping,
- overall coherence and active coping.

At the same time, statistically significant correlations increased between:

- comprehensibility and positive reinterpretation and growth,

- overall coherence and positive reinterpretation and growth,
- overall coherence and acceptance.

These results suggest that the use of positive reinterpretation and growth and acceptance increases with age, whereas active coping decreases with age.

Discussion

Overall, the findings indicate that individuals who most frequently cope with stress through positive reinterpretation and growth, acceptance, and active coping tend to have higher levels of coherence (Antonovsky 1987). At the same time, manageability appears to be the component least associated with active, growth-oriented coping strategies, whereas meaningfulness shows stronger associations. This supports the view that a sense of meaning is the primary motivational component: when it is high, individuals strive to enhance both comprehensibility and manageability (Antonovsky 1987).

The results also confirm that comprehensibility is most strongly linked to active and growth-oriented ways of coping with stress (Antonovsky 1987). Previous studies suggest that age does not significantly differentiate levels of posttraumatic growth among trauma survivors (Ogińska-Bulik 2010, 2013a). The present study allows for the formulation of a hypothesis concerning the relationship between coping strategies and coherence, as well as between coping strategies and age.

In future research involving larger samples, it would be valuable to examine whether, over time, the level of coherence influences the coping strategies individuals use when experiencing stress. This question is formulated as a hypothesis because the sample in the current study was very small; therefore, verification in subsequent research is necessary.

The findings also confirm the complexity of the relationship between coping strategies and coherence. They indicate that this association is not straightforward, which aligns with previous research showing that different components of coping may correlate with posttraumatic growth (Taku et al. 2021).

Summary and pedagogical implications

In summary, the results reveal positive correlations between coherence and action-oriented coping strategies. Active coping is positively correlated with overall coherence and with its comprehensibility and meaningfulness components. A similar pattern is observed for planning. Positive reinterpretation and growth—most closely linked to the concept of posttraumatic growth—is positively correlated with coherence, particularly with comprehensibility, the component most strongly associated with an intellectual understanding of the world. Acceptance, although less directly action-oriented, is also positively correlated with coherence and with the conceptualization of posttraumatic growth.

Thus, individuals with higher levels of coherence tend to select coping strategies that are more active and development-oriented. However, this relationship is not entirely linear. Specifically, positive reinterpretation and growth showed a negative correlation with manageability, which is the most behaviorally oriented component of coherence.

A closer analysis indicates that individuals with the highest overall coherence scores are those who most frequently use positive reinterpretation and growth. However, the highest meaningfulness scores were observed among those with moderate use of active coping, while the highest manageability scores appeared among those with both very low and very high use of active coping. These findings may support the observation that very high coherence can sometimes be associated with behavioral rigidity (Antonovsky 1987).

This study did not fully clarify the relationship between sense of coherence, developmental orientation, and positive reinterpretation of life across different ages. These relationships require investigation in larger and more diverse samples. It is therefore important to note that the small sample size and gender homogeneity were limitations of the present study. Nevertheless, the findings may serve as a basis for further research on the correlations between coherence and coping strategies. Future studies should also consider participants' experiences of specific traumatic events and examine posttraumatic growth within those contexts.

From a pedagogical perspective, the findings suggest that the most important factor in fostering the ability to cope actively with stress—and to reframe it in terms of growth—is supporting individuals in making sense of the world around them and in discovering meaning in their own lives. Those who perceive the world as predictable and comprehensible and who experience their lives as meaningful are more likely to adopt coping strategies oriented toward positive change and personal development.

Pedagogical interventions should be directed primarily toward children and adolescents. Workshops focused on active stress-coping strategies represent a crucial area of intervention. However, attention should also be given to nurturing a sense of meaning in life. In this regard, methods derived from Viktor E. Frankl's logotherapy may be particularly valuable. It is also important not to overlook the traditional values transmitted within families. Antonovsky's research confirms that even severe trauma can be endured when earlier life experiences have fostered a sense of meaningfulness.

However, working exclusively with children and adolescents may prove insufficient if adults continue to transmit their own unresolved trauma to younger generations. Therefore, supporting adults—especially parents and caregivers—in processing difficult experiences is crucial to ensuring that the younger generation has a stable and secure start in life.

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