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SALUTOGENESIS, PERCEPTIONS OF STRESS AND THE STATE OF HEALTH OF MALE AND FEMALE TEACHERS

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Abstract: *The paper focuses on salutogenesis based on the known concept by A. Antonovsky as a process enabling people to cope with stress; in this case specifically within the teaching profession at elementary schools with respect to possible differences between female and male teachers. The subject of this analysis are the relationships between the subjective view of how they experience work-related stress and the subjective (assessment of one's own health) and objective indicators of their state of health (number of days absent from employment due to illness) with regard to the probable mediating influence of Sense of Coherence (SOC) among men and women.*

Key words: *salutogenesis, SOC, teacher stress, men, women, coping with stress*

Introduction

In this paper we focus on some of the connections between a sense of coherence (SOC) as a personality transformation with an expected impact on human health (Antonovsky, 1987, 1993, 1998, etc.) and the subjective perception of work-related stress and the subjective assessment of the health of teachers with regard to possible differences between men and women. We are interested in how SOC and the subjective evaluation of the demands of the teaching profession (generally considered subjectively difficult) is related to the perception of the health of teachers and whether male and female teachers differ in this respect. A. Antonovsky, who promoted the salutogenic model, assumed that SOC substantially affects human health.

The subjective assessment of the conditions in which the individual is found and the demands placed upon them is considered an important part of being able to cope with stress.

In Antonovsky's theory (1985, 1987), salutogenesis is a process leading to the benefit and development of health, a process of rehabilitation and strengthening of impaired health, and the prevention of its endangerment. Antonovsky and other researchers – among whom we can add, for example, H. Selye (1983) – took up the question of why some individuals who are exposed to stress do not succumb to disruptive or harmful

circumstances, unlike others, and who, despite their difficulties, do not lose their mental balance and well-being. Such individuals do not break down, or become ill, even in situations that others cannot handle. When searching for the answer to this question, Antonovsky raised the opposite perspective against the then general focus on the impact of negative influences and their adverse consequences. These negative influences lead to health-relevant considerations that are basically focused on eliminating their causes or alleviating or removing their negative consequences. On the contrary, this author focused on phenomena that have played a positive role on an individual's health and subjective well-being, even under adverse conditions. He was therefore primarily focused on phenomena and conditions that have a positive effect on a person's state of health which are necessary to identify in order to foster their effects and development. Antonovsky tried to define health of as a process (cf. S. Pelcák, 2010) with a lifetime of continuity, as well as to define the broader factors affecting an individual's path to being healthy. At the same time, an emphasis is placed on generalized resistance resources, an active role, freedom of choice, and an individual's responsibility in promotion and prevention in regards to their health.

A set of protective health factors consists of a whole series of factors called „Internal Environment" represented by personality resources (intelligence, knowledge, social competence, etc.) long-acting on the coping processes affecting one's behavior under stress (a selection of coping strategies, neurohumoral reactions of the organism, and the restoration of psychological and physical forces). Within the „external environment" there are a whole number of positive factors (social support, adequate working conditions, relevant working position and influence on other people, adequate impact on society, atd.).

In view of the fact that the stress response to each specific situation is interindividually different, Antonovsky stresses in this context the role of personality factors presented by the SOC.

SOC is characteristically persistent, though with the dynamic global orientation toward the tendency to see living space as more or less orderly, predictable and manageable. The whole world of humanity offers hope that events take place as one can reasonably expect (A. Antonovsky, 1979, H. Antonovsky, Sagy, 1986). Internal and external resources are involved in the formation of the SOC. SOC is a major agent of an individual's psychological resistance, a variable intervening in the interaction of a personality with their environment in relationship to stress stimuli and the responses to them. Antonovsky (1986) referred to SOC as a personality characteristic or coping style. Taking into account that it is actually a composite of three psychological phenomena affecting behavior and experience that cannot be considered internally consistent and inter-situationally stable, it would be from a terminological point of view (just as, for example, with „hardiness") somewhat problematic to label it as a personality trait (see, for example, Earvolino-Ramirez, 2007). It appears to be more appropriate (cf.. K. Paulík, P. Zářický, 2008) to understand SOC as a characteristic that is closer to the position of a personality trait.

SOC consists of three components:

Meaningfulness concerns life itself and its individual components (work, leisure, family, etc.). It is characterized by a tendency to regard the resolution of a given situation as meaningful. So it is worth paying attention to it, taking the challenge to do a specific

activity, and making the necessary effort. Along with this is connected the belief that the expended effort will bring positive results, accompanied by a positive emotional state. If the level of meaningfulness is not sufficient, the individual remains to the side of events, and distances himself from the situation (feels indifference, social isolation, alienation).

Comprehensibility rests in the belief that things and the world as a whole are organized in a meaningful way over the long term. From this arises feelings of certainty and predictability of further development that is possible to prepare for. Given a lack of comprehensibility, there steps into the foreground an overall impression of a lack of regulations, confusion even so far as chaos, and an inability to find one's bearings within a situation and properly react to it.

Manageability is characterized by a belief that individual assumptions (a sense of power, competence) are sufficient (even together with the possible use of available assistance from those around the individual) for the management of life's demands and active involvement in social events, and for resolving given problems. A low level of manageability is characterized by a feeling of one's own lack of the necessary prerequisites, an overlap of placed demands over one's competencies.

Individuals with a high level of SOC adapt more easily to their environment and retain a sense of satisfaction in life and health. Antonovsky sees a fundamental difference in the experience of healthy and sick individuals.

The original 29-item scale for measuring SOC (A. Antonovsky, 1987, 1993) we are working with here has undergone a certain development that has shown a tendency toward being shortened. One short version contains 13 (SOC-3) items and later one even just 9 items. They are used for discerning lower reliability – generally containing a larger number of different methods in the research works.

A number of researchers have dealt with the connections of SOC and a subjective state of health. For example, S.K. Fok, S.Y. Chair, V. Lopez, 2004 recorded a significant correlation between SOC and the coping ability among patients (N = 88) who had gone through a serious illness, as measured using the CCS general coping test (Chinese Coping Scale), as well as a correlation between SOC and quality of life (determined through the 13 items of the „Orientation to Life Questionnaire"). The authors considered subjective health to be a crucial part of quality of life. The research contains many correlations ($p < 0.05$) between SOC and the categories of subjective health as a social function, in general, mental health, perception of health as a whole, vitality, health limits, the management of physical activity, physical pain and limitations resulting from emotional problems. The demographic data used during regression analysis demonstrated that high household income and the support of adult children as predictors of strong SOC. It is significant that things like the influence of age, gender, education, other types of social support were not evident.

In a study of the chronically ill (N = 181), C. Delgado (2007) monitored SOC together with the degree of stress, quality of life and spirituality (here the aspect of personality is not dependent on a particular culture and religion). There was a negative correlation between SOC and a subjective degree of stress, even among persons with chronic obstructive pulmonary disease, which reduces the ability to breathe and move at all. A positive correlation between SOC (in particular with the meaningfulness component) and spirituality was established. Since there is no clear causality of this relation-

ship we may also offer for interpretation a possibility that lies in the fact that a positive change in SOC occurs with the contribution of changes in other variables (which would favor understanding SOC as changing or as changeable personality characteristics). The author C. Delgado himself considered the influence of SOC and spirituality on reducing a measure of stress and on increasing quality of life to be the most important finding of his research. The Danish researchers A. Hogh and E. Mikkelsen (2005) discovered a positive correlation between SOC and mental health, age, and vitality. A negative correlation was found between the measure of cognitive and psychosomatic stress and exposure to violence in the workplace.

Further research studying SOC as a source of subjective health and life satisfaction, as well as studying persons aged over the age of 75 (M. Elovainio, M. Kivimäki, 2000), recognizes a positive correlation between SOC and a subjective state of health, life satisfaction (subjective well-being), and perception of social underpinnings with $p < 0.01$. There was also a negative correlation at 1% between SOC and morbidity determined using a GHQ questionnaire (General Health Questionnaire). This research did not show a connection between SOC and health risk behavior, personal economic security, or age. According to the authors, SOC is associated with multiple variables at a younger age. SOC probably influences these variables, or is influenced by them in all probability, because the context of life reality is wider and more dynamic at a younger age than at an older age. Finally, the authors conclude that SOC plays a role as an important predictor within the bio-medical determination of one‘s state of health.

Research

Male and female teachers (a total of 972) working at upper primary schools in the Czech Republic took part in our research. They were recruited to cooperate in the research by instructed psychology students from the University of Ostrava. The students approached people around them willing to collaborate on research by filling out the submitted personality inventories. The composition of the research sample is shown by Table 1

Table 1 The Research Sample

		Age		Length of employment in education	
Gender	number	Arithm. Mean	Stand. deviation	Arithm. Mean	Stand. deviation
Women	803	41.48	10.084	16.95	10.448
Men	169	40.85	11.933	15.98	12.089
Total	972	41.37	10.426	16.78	10.751

Methods

The addressed teachers filled out two questionnaire methods. The first was an inventory of SOC (29) developed by A. Antonovsky (1987) and translated into English by J. Křivohlavý (1990). Respondents had the task of assessing their own situation using a seven-point scale. The total score then had a range from 29 to 203 points. In addition, it

was possible to set a score for the three components of SOC for each proband: comprehensibility (11 items), manageability (10 items) and meaningfulness (8 items).

The second method was an inventory containing items we have worked with in research in a variety of combinations for a long time. Here we included items on a 5-point scale directly questioning how respondents evaluated

1. their work-related and non-work-related stress („I generally experience (a) the demands of my occupation, (b) the demands of life outside of employment as: 1 – completely unstressful, 2 – slightly stressful, 3 – mediumly stressful, 4 – very stressful, 5 – extremely stressful“);
2. my own health (1 not at all healthy... 5 completely healthy);
3. information about the number of days absent from work in the previous calendar year due to illness served as an objective indicator of the state of health.

In addition to this, age, gender and length of time working in the teaching profession were also determined.

Results

A description of the values of individual variables identified by the used methods is shown in Table 2.

Table 2 Description of the results

		Gender		
		women	men	Total
Work stress	Arithm. mean	3.05	2.95	3.05
	Stand. deviation	0.842	0.930	0.859
Life stress	Arithm. mean	2.68	2.70	2.68
	Stand. deviation	0.776	0.714	0.766
SOC	Arithm. mean	136.94	135.08	136.62
	Stand. deviation	18.503	17.955	18.413
Comprehensibility	Arithm. mean	45.67	45.80	45.70
	Stand. deviation	7.690	6.967	7.566
Manageability	Arithm. mean	49.06	48.35	48.93
	Stand. deviation	7.462	7.819	7.526
Meaningfulness	Arithm. mean	42.44	40.92	42.18
	Stand. deviation	6.383	6.962	6.509
Days absent	Arithm. mean	6.94	4.43	6.50
	Stand. deviation	18.562	7.310	17.168
Subjective health	Arithm. mean	3.86	3.78	3.85
	Stand. deviation	0.794	0.963	0.826

The differences in the controlled variables between men and women tested by the Mann-Whitney test (controlled variables do not meet the requirement of a normal distribution) do not appear to be statistically significant. For both men and women the difference in perception of work-related and non-work-related stress appeared to be sta-

tistically significant. Work-related stress is felt as greater than non-work-related stress

The mutual connections expressed through the use of correlational relationships are presented in table 3.

Table 3 Correlation of observed variables

	Work-related stress	Life stress	Days absent	Evaluation of one‘s own health	SOC
Work-related stress	1	.294**	.070*	-.129**	-.093**
Life stress	.294**	1	.033	-.135**	-.216**
Days absent	.070*	.033	1	-.169**	-.035
Evaluation of one‘s own health	-.129**	-.135**	-.169**	1	.213**
SOC	-.093**	-.216**	-.035	.213**	1

SOC significantly correlates negatively to the assessment of work-related and non-work-related stress and positively to the assessment of one‘s own health. The relationship between SOC and the number of work days missed due to illness is not statistically significant. The correlation does not differ for men and women and is generally only low. Of the components of SOC, there was a correlation in the evaluation of one‘s own health among the factors comprehensibility (0.162), manageability (0.215), and meaningfulness (0.197). In order to search for more detailed answers to the question of whether SOC or its components affect teachers‘ assessment of their own health we used linear and multifunctional ordinal regression analysis. The regression coefficients, as with the correlation coefficients of the entire sample, are very low. Thus they can explain only a small part of the variance. Moreover, there are no forecasting errors (residuals) of normal distribution where linear regression is concerned. Similarly, the results obtained through the application of the ANOVA method did not show any substantial factual meaning. It was possible to notice statistically significant relationships within the entire sample between the evaluation of their own health and manageability components, though it is not very objectively essential. Unlike male teachers, among female teachers there was a statistically significant relationship between the evaluation of health and the meaningfulness component. Regression analysis on the relationship between SOC and the perception of work-related and non-work-related stress among teachers suggests that both types of stress are statistically significant. However, from the perspective of factuality, the influence of the SOC component of manageability is almost irrelevant.

In order to further analyze the impact of SOC on the perception of stress and on selected indicators of health among teachers, we proceeded to divide the respondents into two groups according to the median score in SOC. The group with low SOC was represented by persons with scores lower than the median value. The group with higher SOC consisted of individuals whose score was equal to or higher than the median. In both of these groups I found differences in the assessment of stress and health indicators while taking into account the gender of the respondents. The results are summarized by tables 4 to 6.

Table 4 Tracked variables according to the level of SOC in the whole sample

Sum of SOC		Work-related stress	Life stress	Days absent	Subj. health
Low	mean	3.08	2.80	6.37	3.70
	Stand. deviation	.848	.763	15.678	.870
High	mean	2.99	2.56	6.63	4.00
	Stand. deviation	.867	.750	18.593	.749
Significant difference		-	1%	-	1%

The Mann-Whitney U test was used because the tracked variables did not meet the requirement of a normal distribution.

Within the entire sample, the group of individuals with a higher level of SOC differed from those individuals with a lower level of subjective evaluation of life stress and their own state of health

Table 5 Tracked variables according to the level of SOC in the male sample

Sum of SOC		Work-related stress	Life stress	Days absent	Subj. health
Low	mean	3.01	2.73	4.80	3.54
	Stand. deviation	.923	.697	6.817	1.029
High	mean	104	104	104	103
	Stand. deviation	2.87	2.62	4.10	4.03
Significant difference		-	-	-	1%

The Mann-Whitney U test was used.

Among men, the groups with a higher and lower score of SOC varied only in the evaluation of their own health, which was evaluated as better among those who have a higher level of SOC

Table 6 Tracked variables according to the level of SOC in the female sample

Sum of SOC		Work-related stress	Life stress	Days absent	Subj. health
Low	mean	3.11	2.81	6.58	3.74
	Stand. deviation	.812	.759	15.903	.844
High	mean	3.00	2.54	6.83	4.04
	Stand. deviation	.859	.771	19.210	.727
Significant difference		5%	1%	-	1%

The Mann-Whitney U test was used.

In the female teacher subset of individuals within the group with a higher SOC score had a higher assessment of their own state of health and considered their work-related and non-work-related stress as lower compared to persons with a lower score. However, despite the statistical significance of these differences, they also cannot be attributed any greater factual importance, as they are lower than the selection measurement error for the 5-point scale used

Discussion and conclusion

The research we carried out on a group of teachers from the second stage of primary schools does not suggest that the size of SOC as a personality variable of salutogenesis play an essential role, in any relevant sense, on teachers‘ perception of their own work-related stress, nor on the assessment of their state of health and on the number of days absent per year due to illness. In this sense, there is not even any significant difference between men and women. Certain values of the observed correlation coefficients reached a level of statistical significance of 1%, sometimes 5%, mainly due to the relatively high number of participants in this research, in which there are statistically significant and low regression and correlation coefficients. They explain, of course, just a tiny part of the common SOC variance and subjective evaluation of stress and their own state of health. On the basis of a low value of correlation, it can be assumed that there are other influences that we did not observe in our research. The regression analysis (linear and multiple) has also provided some statistically significant results. These results are, however, also not very relevant from a factual point of view due to the very low value of explained variance.

In both our other research (e.g.. K. Paulík et al, 2009) and here, the evaluation of work-related stress is evaluated by teachers of both genders as higher than non-work-related stress, which can be regarded as support for the presumption of a relatively high level of subjective stress among those in the teaching profession.

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SALUTOGENEZE, PERCEPCE ZÁTĚŽE A ZDRAVÍ UČITELŮ A UČITELEK

Abstrakt: Příspěvek se zaměřuje na salutogenezi ve známém pojetí A. Antonovského jako proces umožňující vyrovnávání se se zátěží v našem případě konkrétně v učitelské profesi na základní škole se zřetelem na možné rozdíly mezi učitelkami a učiteli. Předmětem analýzy jsou vztahy mezi subjektivním prožíváním pracovní zátěže a subjektivními (hodnocení vlastního zdraví) i objektivními ukazateli zdravotního stavu (počet dnů zameškaných v zaměstnání pro nemoc) s ohledem na pravděpodobný zprostředkující vliv Sense of Coherence (SOC) u mužů a žen.

Klíčová slova: salutogeneze, SOC, učitelský stres, muži, ženy, zvládání stresu