

# Work experience and school workers' health evaluated by salutogenic health indicators

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**Background.** The aim of the study was to establish relations between work experience and health, evaluated by salutogenic health indicators, among school workers.

**Materials and methods.** Teachers (n = 180) and other school workers (n = 154) from randomly selected Panevėžys district schools were questioned using instruments developed by scientists of the Kristianstad University: the Work Experience Measurement Scale (WEMS) and Salutogenic Health Indicator Scale (SHIS). The questionnaire of personal data contained questions about sociodemographic and work-related characteristics. The differences among the mean values were tested by the independent samples t-test and one-way ANOVA. The Cronbach's alpha coefficient was used to check the internal consistency. The significance level was accepted at p = 0.05.

**Results.** In the teachers' group, 86.7% were females (75.3% among others), 20.4% were older than 55 years (30.7% in other groups), 18.9% held an executive position (8.5% among others). Teachers, as compared with other school workers, scored higher the domain of internal work experience, (76.9 vs. 62.8, respectively), while other school workers gave higher standardized scores for the time experience domain (71.9 vs. 63.7, p < 0.001 respectively). The SHIS scores among teachers varied from 54.7 (worst experience) to 78.0 (best experience), p < 0.001. In the group of other school workers, the SHIS mean scores varied from 51.9 to 80.0, p < 0.001.

**Conclusions.** Teachers more positively evaluated the domain of internal working experience, while other school workers were more satisfied with time experience at the workplace. The established strong correlation between work experience and health, measured by salutogenic health indicators, encouraged the idea to implement work-related health promotion at school.

**Key words:** work experience, health, school, salutogenic health indicators

## INTRODUCTION

The importance of this study is related to the interest to have a salutogenic perspective in work-related research, as such studies in Lithuania, as well as in other European Union countries, are rare. The concept of salutogenesis indicates that the sense of coherence (SOC) is the key determinant in the maintenance of health. Individuals with a strong sense of coherence have the ability to define life events as less stressful

(comprehensibility), mobilize resources to deal with encountered stressors (manageability) and possess the motivation, desire and commitment to cope (meaningfulness) (1). According to the SOC theory, health increases the possibilities to combat daily stress, whereas ill health restricts personal abilities to cope with stressful situations (2). SOC has been studied in relation to work environment dimensions, self-reported health and burnout (3). SOC has a potential to be developed during the entire life (4); also, it could be learned. According to Antonovsky, an individual's experiences of his or her workplace environment could impact their SOC.

However, there is an obvious tendency to measure workers' health from the ill-health perspective. The

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research focused on the extent and the morbidity spectrum related with early retirement among teachers indicated the prevailing depressive disorders (43%) and burnout syndrome (16%). Most frequent somatic diseases among teachers are muscular skeletal, cardiovascular disorders and malignant tumours (respectively 13%, 8% and 7%). Female teachers more frequently have a diagnosis of psychiatric disorders and malignant tumours, while male teachers more often suffer from cardiovascular and muscular skeletal disorders (5). Teachers are mostly unaware of work-related health risks, especially bournout due to teaching-related stress, and usually they get no support from the employers (6). Burnout is a negative affective response occurring as a result of chronic stress. Early theories of burnout focused exclusively on work-related stressors, and recent research indicates that both personality and work-related stressors are associated with burnout dimensions (7). Recent scientific findings support the impact of work harassment and emotional exhaustion on teachers in the workplace setting. Higher emotional exhaustion was related to four aspects of work harassment: disruption, humiliation, alienation and indignity. Teachers who whitnessed work harassment were more emotionally exhausted (8).

Occupational stress and strain induce worsening physical and mental health among teachers, while coping resources could promote their health. Adequate coping resources, especially social support at the workplace, could promote teachers' health (9). Some cognitive-behavioural methods for overcoming workload and enhancing the sense of self-mastery and relations with students could influence the decrease of emotional exhaustion, perceived workload and somatic complaints. The greatest effect was observed with regard to increased behavioural job control (10).

Important personal characteristics for a high level of SOC are an internal locus of control and self-esteem, which contributes to a positive outlook on life. The salutogenic Health Indicator Scale (SHIS) focuses on indicators of health in a holistic sense, covering both an individual's interactive functions and intrapersonal characteristics (11). The SHIS is recommended to use in workplace health promotion. If the SHIS is combined with a questionnaire measuring work and workplace characteristics, an assessment of health impacts from interventions could be made.

Empirical findings have already demonstrated the SHIS' ability to discriminate between different groups when analysing their health situation. This quality indicated the usefulness of the salutogenic and holistic measure of the SHIS in different contexts in the field of health promotion (12).

The aim of the study was to compare experience at work among school workers according to working position and to establish relations between work experience and health, evaluated by salutogenic health indicators.

## MATERIALS AND METHODS

Eleven schools (4 secondary, 4 basic, 1 gymnasium and 2 primary schools) were randomly selected from the list of the Panevėžys district schools. The permission of schools' principals to perform the research and the agreement of the local Bioethics Committee had been obtained before the study. The research was performed in January 2011. All workers in selected schools were asked to fill in a questionnaire. The questionnaire was filled in by 334 school workers (response rate 83.5%). School workers were divided into groups of teachers ( $n = 180$ ) and other school workers ( $n = 154$ ). The group of other school workers included kitchen workers, cleaners, drivers, wiremans, secretaries, IT specialists, book-keepers, etc. A rather small sample and only one district in which the research was performed could be considered as limitations of the survey.

The research instruments were developed by the scientists of the Kristianstad University (11, 13). The translation of the questionnaire from Swedish into Lithuanian and then back into Swedish had been performed before the study. Each participant filled in a questionnaire of three parts. WEMS consisted of statements which, as authors declared, mostly reflected the reaction of the workers to six organizational and work relationship domains: supportive working conditions, individual experience, individual responsibility, time experience, management, and reorganization. The statements were directed positively, so it was possible to analyze the results from the salutogenic perspective. The respondents evaluated the statements (Likert scale) by scores (from 1 – absolutely disagree to 6 – absolutely agree).

The SHIS was compiled according to the holistic health concept which is based on the positive health evaluation. The SHIS instrument is a semantic differential as each question has response alternatives on a six-graded scale for positive and negative words with opposite meanings.

The personal data questionnaire contained questions about respondents' age, gender, position, the number of years of working at school, and workload.

The total indexes for SHIS, WEMS and six dimensions of WEMS were calculated. All values of the indexes were standardized. The standardization was performed in order to make them range from 0 to 100. This enabled a comparison of index distribution. Internal consistency was explored using Cronbach's alpha (CA) coefficient. Reliability coefficients greater than 0.80 were considered as very good. To evaluate the significance of associations between the categorical variables, the  $\chi^2$  test was used. The normality distribution of the indexes was evaluated by the Kolmogorov–Smirnov test. The gender-related differences were tested by the independent samples t-test. The differences between the categorical variables and the indexes were tested by the one-way ANOVA with Tukey's honestly significant difference test if equal

variances were assumed, and by Tamhane's T2 test, if equal variances were not assumed. In all tests,  $p$  values  $<0.05$  were interpreted as statistically significant.

## RESULTS

The results have indicated that in the group of teachers females took the greater part as compared with other school workers (86.7% vs. 75.3%, Table 1). One third (30.7%) of other school workers and 20.4% of teachers were aged over 55. Teachers more often, as compared with other school workers, took an executive position (18.9% vs. 8.5%). Teachers more frequently had more than 10 years of working experience (56.7%) as compared with other workers (42.9%). A greater part of teachers (26.1%), as compared with other school workers (13.1%), stated they had one additional job.

Cronbach's alpha coefficients were used to check the reliability of the whole instrument and WEMS domains and varied from 0.81 to 0.95, total CA = 0.94. Comparison of the standardized WEMS index (CA = 0.89) values demonstrated the differences among teachers and other school workers. Teachers, as compared with other school workers, had higher scores in the domain of internal working experience (76.9 vs. 62.8,  $p < 0.001$ , Table 2). Other school workers were more positive about time experience, as compared with teachers (71.9 vs. 63.7,  $p = 0.001$ ). We found no age- and gender-related differences when evaluating work experience, but the tendency towards higher autonomy scores among workers older than 55 years could be identified. Respondents younger than 39 years were more positive about the management, reorganization, internal working experience, time experience and supportive working conditions as compared with older respondents. Females were more positive

Table 1. Sociodemographic characteristics according to working position

Characteristics	Positions				P value
	Teachers		Other school workers		
	N	%	n	%	
Gender					
Male	24	13.3	38	24.7	$\chi^2 = 7.1$ , $df = 1$ , $p = 0.011$
Female	156	86.7	116	75.3	
Age (years)					
≤39	44	25.0	32	20.9	$\chi^2 = 4.6$ , $df = 2$ , $p = 0.100$
40–54	96	54.5	74	48.4	
≥55	36	20.5	47	30.7	
Missing data	4	0.0	1	0.0	
Holding an executive position					
Yes	34	18.9	13	8.5	$\chi^2 = 7.4$ , $df = 1$ , $p = 0.007$
No	146	81.1	140	91.5	
Missing data	1	0.0	0	0.0	
Employment in education system (years)					
<4	32	17.8	37	24.0	$\chi^2 = 6.3$ , $df = 2$ , $p = 0.041$
4–10	46	25.6	51	33.1	
>10	102	56.7	66	42.9	
Other employments					
No	130	72.2	133	86.9	$\chi^2 = 11.8$ , $df = 3$ , $p = 0.008$
Yes, one	47	26.1	20	13.1	
Yes, two	1	0.6	0	.0	
Yes, more than two	2	1.1	0	.0	
Missing data	0	0.0	1	0.0	

Table 2. Comparison of WEMS domains according to working position

WEMS domains	Positions		t test, p value	
	Teachers	Other school workers	t	p
	m (95% CI)	m (95% CI)		
Management	80.2 (77.4–83.0)	80.5 (77.0–84.0)	0.13	0.900
Reorganization	63.2 (59.7–66.6)	63.0 (58.2–67.6)	0.07	0.941
Internal working experience	76.9 (74.9–78.9)	62.8 (59.0–66.7)	6.70	0.000
Time experience	63.7 (60.6–66.9)	71.9 (68.0–75.9)	3.25	0.001
Autonomy	69.2 (66.3–72.2)	64.5 (60.3–68.6)	1.87	0.062
Supportive working conditions	69.7 (67.1–72.4)	71.4 (68.0–74.9)	0.79	0.433

about the reorganization, internal working experience and autonomy domains. Respondents whose work experience in the education system was over 10 years less positively evaluated the time experience and supportive working condition domains as compared with persons whose work experience was 4–10 or less than 4 years (65.2 vs. 67.2 and 74.5, as well as 68.7 vs. 70.3 and 75.9,  $p < 0.05$ , Table 3).

The SHIS index ( $CA = 0.92$ ) was standardized so as to range from 0 to 100%. A higher SHIS value indicated better health. No difference between teachers' and other school workers' health, evaluated from the salutogenic perspective, was revealed; however, teachers' health was scored somewhat

higher as compared with other school workers (65.2 vs. 64.0). The SHIS scores were decreasing with age – from 68.9 ( $\leq 39$  years) to 61.3 ( $\geq 55$  years),  $p = 0.05$  (Table 4).

A relation between WEMS and SHIS was observed both among teachers and other school workers (Table 5). WEMS data were differentiated according to the quartiles from those with the worst to those with the best work experience. The lowest WEMS mean scores (1st quartile) were related to the lowest SHIS scores. Among teachers, SHIS scores from the 1st to 4th WEMS quartile varied from 54.7 to 78.0,  $p < 0.001$ . In the group of other school workers, the SHIS mean score varied from 51.9 to 80.0,  $p < 0.001$ .

Table 3. Comparison of WEMS domains according to years of employment in education system

WEMS domains	Employment (years)			ANOVA	
	<4	4–10	>10	F	p
	m (95% CI)	m (95% CI)	m (95% CI)		
Management	85.5 (81.0–89.9)	79.6 (75.4–83.7)	78.8 (75.6–81.9)	2.745	0.066
Reorganization	67.0 (60.6–73.5)	61.3 (55.8–66.8)	62.6 (58.8–66.4)	1.010	0.365
Internal working experience	70.0 (64.7–75.3)	71.9 (67.9–75.9)	70.1 (67.1–73.2)	0.284	0.753
Time experience	74.5 (69.0–80.0)	67.2 (62.2–72.1)	65.2 (61.8–68.5)	3.895	0.021
Autonomy	63.2 (57.4–69.0)	70.6 (66.0–75.1)	66.9 (63.4–70.4)	2.072	0.128
Supportive working conditions	75.9 (71.5–80.3)	70.3 (66.2–74.3)	68.7 (65.7–71.7)	3.208	0.042

Table 4. Comparison of SHIS mean values according to working position, age, gender and employment duration

Variables	SHIS		p
	m	(95% CI)	
Working position			
Teacher	65.2	62.7–67.7	0.591
Other school workers	64.0	60.4–67.7	
Age (years)			
$\leq 39$	68.9	64.3–73.5	0.048
40–54	64.3	61.7–67.0	
$\geq 55$	61.3	56.3–66.2	
Gender			
Male	67.6	61.7–73.5	0.193
Female	64.0	61.7–66.2	
Years of employment			
<4	69.4	64.3–74.4	0.089
4–10	63.2	59.0–67.4	
>10	63.6	60.8–66.4	

Table 5. Relation between WEMS and SHIS among teachers and other school workers

WEMS	SHIS, m (95% CI)	F	p
<b>Teachers</b>			
1st quartile	54.7 (49.6–59.7)	16.96	<0.001
2nd quartile	60.2 (55.9–64.5)		
3rd quartile	68.9 (64.1–73.7)		
4th quartile	78.0 (73.2–82.8)		
<b>Other school workers</b>			
1st quartile	51.9 (45.3–58.4)	14.15	<0.001
2nd quartile	59.9 (51.6–68.2)		
3rd quartile	69.0 (61.3–76.7)		
4th quartile	80.0 (74.5–85.6)		

## DISCUSSION

In this study, we have expected to identify what are the teachers' experiences at work and what are the health resources to cope with negative experiences. The teacher's profession is characterised by a constant contact and interaction with people. The behaviour pattern that is common for teachers (type A) is characterised by an excessive professional commitment and difficulties with emotional distancing from work. In addition, impaired defense mechanisms in stressful situations as well as negative emotions characterise this exhausting pattern (14). Type A behaviour is related with coronary artery disease and myocardial infarction (15). Healthy attitude towards work is characterised by high ambitions at work, seeking significance at work, high career ambitions, tendency to overexert, striving for perfection, but also by the ability to keep emotional distance from work. This behavioural pattern represents resistance to stress, ability to cope with problems, balanced mental stability and is related with positive emotions, such as satisfaction with work, personal life and social support. From the health promotion perspective, work should be safe, stimulating, satisfying and enjoyable and should focus on the positive experiences of the workers (13).

Our study results have shown the highest WEMS scores in the domain of management and the lowest ones in reorganization. Teachers and other school workers were satisfied with management, but the reorganization influenced them negatively. We hypothesized that the positive perception of management could be used for health promotion purposes, but at the same time it should be borne in mind that reorganization negatively affected work environment perception. Teachers were more satisfied with internal work experience, while other school workers were more positive about time experience. Greater work experience was associated with a less positive evaluation of time experience and supportive working conditions. Swedish hospital data have shown that the SHIS index increases with age (12). This is in contrast to pathogenic health measurements. The Lithuanian school data were similar to a pathogenic tendency, because the SHIS decreased with age. These differences could be partly explained by cultural or setting-based factors, but an additional research should be performed in this area.

The importance of the work environment was shown by a strong relationship between WEMS and SHIS among teachers, as well as among other school workers. Positive work experience was related with good health. Teachers' health promotion is the matter of great importance because of emerging evidence that schools in which teachers reported better health and higher levels of well being had fewer students engaged in unsafe sexual health behaviors and fewer students reporting significant levels of depressive symp-

toms (16). Several years ago it was found that the negative development of pupils' health and self-esteem could partly be explained by the more unfavourable psychosocial environment that prevailed at school at the senior level (17). It proved the need for schools to improve schoolchildrens' social situation at school in relation to the teachers' work situation.

## CONCLUSIONS

Teachers more positively evaluated the domain of internal working experience, while other school workers were more satisfied with the time experience domain. A longer working experience was associated with a less positive evaluation of time experience and supportive working conditions. Health, evaluated by salutogenic health indicators, decreased with age.

The established strong relationship between experience at work and health, measured from the salutogenic perspective, encouraged the idea to implement work-related health promotion at schools. However, differences between Swedish and Lithuanian workers' experience and its influence on health indicate the need of further research in this area.

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## MOKYKLOS DARBUOTOJŲ DARBO PATIRTIES IR SVEIKATOS, ĮVERTINTOS SALIUTOGENINIAIS SVEIKATOS INDIKATORIAIS, SĄSAJOS

### *Santrauka*

**Tyrimo tikslas.** Tyrimo tikslas buvo palyginti skirtingose pareigose dirbančių mokyklų darbuotojų darbo patirtį ir nustatyti sąsajas tarp darbo patirties ir sveikatos, įvertintos salitogeniniais sveikatos indikatoriais.

**Medžiaga ir metodai.** Anketinėje apklausoje dalyvavo mokytojai ( $n = 180$ ) ir kiti mokyklų darbuotojai ( $n = 154$ ), dirbantys atsitiktinai atrinktoje Panevėžio rajono mokyklose. Apklausai buvo panaudoti Kristianstad universiteto mokslininkų parengti instrumentai: Darbo patirties vertinimo skalė (angl. *Work Experience Measurement Scale* – WEMS) ir Salitogeninių sveikatos indikatorių skalė (angl. *Salutogenic Health Indicator Scale* – SHIS). Asmeninių duomenų klausimyną sudarė klausimai apie sociodemografines ir su darbu susijusias charakteristikas. Vidurkių palyginimui buvo naudotas  $t$  testas ir ANOVA metodas. Skalių vidinis patikimumas vertintas Kronbacho alfa koeficientu. Patikimumo lygmuo pasirinktas mažesnis nei 0,05.

**Darbo rezultatai.** Mokytojų grupę sudarė 86,7 % moterų (75,3 % tarp kitų darbuotojų), 20,4 % – vyresni nei 55 metų asmenys (30,7 % kitų mokyklos darbuotojų grupėje), 18,9 % užėmė vadovaujančias pareigas (8,5 % kitoje grupėje). Mokytojai, lyginant su kitais darbuotojais, aukštesniais balais įvertino vidinę darbo patirtį – atitinkamai 76,9 ir 62,8, tuo tarpu kiti darbuotojai, lyginant su mokytojais, aukštesniais standartizuotais balais įvertino laiko panaudojimą – atitinkamai 71,9 ir 63,7 ( $p < 0,001$ ). Mokytojų SHIS balų vidurkiai svyravo nuo 54,7 (tarp blogiausiai vertinusių darbo patirtį) iki 78,0 (geriausiai darbo patirtį įvertinę asmenys) ( $p < 0,001$ ). Kitų mokyklos darbuotojų SHIS balų vidurkiai kito atitinkamai nuo 51,9 iki 80,0 ( $p < 0,001$ ).

**Išvados.** Mokytojai palankiau vertino vidinės darbo patirties veiksnį, o kiti mokyklos darbuotojai – laiko panaudojimą. Nustatytas stiprus ryšys tarp darbo patirties ir sveikatos, įvertintos salitogenezės aspektu, ir tai pagrindžia būtinybę vykdyti sveikatą stiprinančią veiklą mokyklose.

**Raktažodžiai:** patirtis darbe, sveikata, mokykla, salitogeniniai sveikatos indikatoriai