

# PSYCHOSOCIAL WORKING CONDITIONS IN ROMANIA: COMPARISON BETWEEN BLUE AND WHITE COLLARS

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**Abstract:** Stressful working conditions can be a risk for health and well-being, difficult to recognize, quantify and manage. In the present paper, the Copenhagen Psychosocial Questionnaire - a short and adjusted version - was used in order to meet the criteria of a valid, reliable, and diagnostic power instrument in comparing two different categories of Romanian employees from the perspective of psychosocial working conditions. Statistical inter-item dependence was measured by the Spearman's rank test and resulted in significant correlations between 18 of 23 dimensions, especially in white collars group between fatigue - stress, and social support - quality of leadership ( $r_{\text{Spearman}} > 0.71$ ). Reliability and diagnostic power for low vitality (fatigue) was better reflected in white collars group ( $r_{\text{Spearman}} = 0.61$ ) compared with blue collars group ( $r_{\text{Spearman}} = 0.55$ ), considering the criteria of interpersonal relations and leadership scale more relevant than quantitative demands or job satisfaction in assessing Romanian psychosocial working conditions for certain groups.

## INTRODUCTION

It is well known that workplace can act as a buffer, preventing people to become mentally ill by social support from colleagues, the ability of focusing on work-related issues, commitment, or sense of community. At this time, vulnerability to psychosocial stress, burnout and mental health problems are rising with the changes in global economy and labour force market and stress-related disorders are the biggest overall cause of early death in Europe.(1)

European Communities recognize the importance of mental health and wellbeing, highlighting work-related stress as a reason for absenteeism and occupational disability.(2,3) Because work stress is a broad concept covering so many different hazards, the use of stress models helps to clarify the “dose-effect” relationship, for example demand-control model and the effort-reward imbalance model.(4,5) The association between job stress models and wellbeing indicators was established following the direction from low justice to decreasing wellbeing such as psychological distress, sleeping problems, and job satisfaction.(6) Furthermore, work-related stress subjected certain somatic as well as subclinical disturbances, i.e. spinal shrinkage followed by back pain, mortality in middle-aged public sector employees, significantly higher levels of plasma cortisol and messenger ribonucleic acid (mRNA) expression of glucocorticoid receptor  $\alpha/\beta$  in lymphocyte, and fronto-temporal cortex dysfunction.(7-10) Since the incidence of depression is increasing continuously worldwide, work stress was significantly associated with depressive symptoms in cohort studies, highlighting the importance of prevention in an ageing working population in the future.(11,12)

Romanian regulations on occupational health and safety issue recognize three occupation-related diseases having stress and distress among workplace risk factors with more than 20% contribution to etiology, respectively arterial hypertension, coronary heart disease, and neurosis.(13)

## PURPOSE

The aim of this paper was to compare two different categories of employees by assessing the psychosocial working environment using the short adjusted Copenhagen Questionnaire, in terms of reliability, validity, and diagnostic power to predict stress-related outcomes.

## MATERIALS AND METHODS

The short version of the Copenhagen Psychosocial Questionnaire (COPSOQ) was used in 229 participants coming from two categories of employees, respectively productive workers and civil servants/office workers meeting the eligible criteria of comparable age and seniority at the same workplace, as shown in table no. 1. The applied Romanian version was configured with 23 dimensions (scales) and 40 items, replacing the original dimensions “degree of freedom at work” and “sense of community” with “trust regarding workplace”, respectively “equity at the workplace”.(14) Six items regarding gender, age, exposure duration/seniority, education, and smoking/years of smoking were added.

Table no. 1. Study design and subjects

Subjects	Workplace (city of Sibiu)	Mean age (years)	Seniority at the same workplace (years)	Gender	
				F	M
Group I (N=111)	Footwear production	39.42 ±10.92	14.65 ±10.62	71 %	29 %
Group II (N=118)	Office (civil)	39.63 ±10.12	16.56 ±10.41	39 %	61 %

Statistic analysis was performed by the Spearman's rank test, according to the following formula:

$$r_{\text{Spearman}} = 1 - \frac{6 \sum d_i^2}{N^3 - N} \quad \text{Where } d_i = \text{difference in paired ranks, and } N = \text{number of groups.}$$

Spearman's correlation coefficient ( $r_{\text{Spearman}}$ ) measures the strength of association between two ranked variables (items

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in our case). A value of  $\pm 1$  means perfect correlation, while 0.00 means the two variables do not vary together at all.

## RESULTS

As shown in table no. 2, the two respondent groups are differentiated by gender and education ( $p=0.01$ ).

**Table no. 2. Education level according to ISCED\* codes**

Table 2: Education level according to ISCED codes								
Gender	ISCED code Group I				ISCED code Group II			
	2	3	4	5	2	3	4	5
Males	19	10	3	0	0	31	10	30
Females	43	29	7	0	2	9	1	34
Total	62	39	10	0	2	40	11	64
%	55.8	35.1	9.0	0.0	1.7	34.2	9.4	54.7
	Mean value = <b>2.53</b>				Mean value = <b>4.17</b>			

\*International Standard Classification of Education

Where: ISCED 2 = high school, classes IX-X; school of arts and crafts; ISCED 3 = high school, classes XI-XII or XI-XIII; ISCED 4 = post-secondary school; ISCED 5 = bachelor/master graduate.

The number of smokers was increased in group II (odd ratio 1.7) compared to group I, but not of significance ( $p=0.06$ ).

Significant correlations have been found between COPSOQ items addressing to 18 of 23 dimensions (table no. 3), more relevant for group II "white collars" especially between fatigue - stress, and social support - quality of leadership ( $r_{\text{Spearman}} > 0.71$ ). The following variables did not result in statistical dependence: quantitative demands, working pace, job satisfaction, threatening with violence, and victimization at the workplace. Inverse correlation was found in group II between general health and fatigue. It may be noticed that statistical inter-item dependence of "emotional demands" was scored only in group II, while correlations referring to "influence at work", "possibilities for development", and "meaning of work" accounted for group I "blue collars".

**Table no. 3. Significant inter-item correlation ( $r_{\text{Spearman}} \geq \pm 0.51$ ) in the questioned groups**

Dimensions	$r_{\text{Spearman}}$	
	Group I	Group II
Emotional demands – Fatigue		0.59
Emotional demands – Stress		0.57
Emotional demands – Work-family conflict		0.61
Influence at work – Possibilities for development	0.54	
Possibilities for development – Meaning of work	0.51	
Possibilities for development – Commitment to the workplace	0.51	
Meaning of work – Predictability	0.51	
Meaning of work – Commitment to the workplace	0.62	
Meaning of work – Role-clarity		0.58
Commitment to the workplace – Predictability	0.61	
Commitment to the workplace – Trust regarding workplace		0.52
Predictability – Quality of leadership	0.51	
Predictability – Equity at the workplace		0.70
Predictability – Social support		0.52
Predictability – Quality of leadership	0.51	0.52
Predictability – Feedback at work		0.58
Feedback at work – Equity at the workplace	0.55	0.60
Feedback at work – Social support	0.51	0.67
Feedback at work – Quality of leadership	0.53	0.66
Quality of leadership – Equity at the workplace	0.53	0.61
Quality of leadership – Social support	0.57	<b>0.78</b>
Social support – Equity at the workplace		0.65
Work-family conflict – Fatigue	0.56	0.64
Work-family conflict – Stress		0.64
Trust regarding workplace – Equity at the workplace	0.57	0.54

General health – Fatigue		–0.53
Fatigue – Stress		<b>0.76</b>
Violence – sexual harassment	0.60	

## DISCUSSIONS

This particular approach by Spearman nonparametric measurement of statistical inter-item dependence supports the reliability and validity of the adjusted short COPSOQ in both categories of Romanian participants, respectively blue and white collars. Internal consistency of the scales was found in 82% of scales, comparable with Spanish and German survey results.(15,16) By comparing reliability of scales in the analyzed groups, white collars group has shown inter-item correlation in the scale of emotional demands, interpersonal relations and leadership, and strain (effects, outcomes) with mean  $r_{\text{Spearman}}$  of 0.61, while blue collars group has shown correlations in the scale of influence and development, and interpersonal relations and leadership with mean  $r_{\text{Spearman}}$  of 0.55. This difference points out that stress is perceived in all dimensions by civil servants/office workers. In time, questionnaires derived from the Danish short version of COPSOQ have demonstrated reliability and validity in many countries, i.e. French questionnaire is composed of 32 items grouped into 17 scales (17), although initially, only the long version (COPSOQ I) was dedicated to research purposes.

Apart from describing the psychosocial work environment, this psychometric instrument may have diagnostic power for certain outcomes, such as sleeping troubles, burnout, sickness absence, mobbing, cognitive stress symptoms (18,19), the need for recovery (20), or poor mental health and low vitality.(21) We found low vitality (fatigue) reported by white collars group in relationship with stress ( $r_{\text{Spearman}} = 0.76$ ), work-family conflict ( $r_{\text{Spearman}} = 0.64$ ), emotional demands ( $r_{\text{Spearman}} = 0.59$ ), and general health ( $r_{\text{Spearman}} = -0.53$ ). By contrast, recent German findings suggest no relationship between stress and outcomes.(22) Emotional demands among white collars were also reported in medical doctors (23) suggesting COPSOQ should follow theoretical and empirical development in managing core variables. Gender may be an exposure factor as described by Portuguese researchers (24), because we found inter-item correlation related to abusive behaviour ( $r_{\text{Spearman}} = 0.60$ ) in blue collar group composed of 71% females.

## CONCLUSIONS

In conclusion, strong correlations provided by interpersonal relations and leadership scale, as well as by strain (effects, outcomes) scale especially in white collars group underline the validity criteria of interpersonal relations more than quantitative demands or job satisfaction in assessing psychosocial working environment in Romanian employees.

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