

# EVALUATION OF THE PSYCHOLOGICAL WORK ENVIRONMENT IN ROMANIAN COMPANIES USING THE ADJUSTED COPSOQ QUESTIONNAIRE

MIHAELA HĂRĂȚĂU<sup>1</sup>, MIHAELA STOIA<sup>2</sup>, D. BARDAC<sup>3</sup>

<sup>1</sup>Romtens Foundation of București, <sup>2</sup>“Lucian Blaga” University of Sibiu

**Keywords:** stress, psycho-social relations, workplace, constraints, control

**Abstract:** Along with reducing the physical effort, industrial development brings an increase in the neuro-psychological demands at work, which predicts an increase in stress-sensitive psychiatric disorders in the coming years (anxiety and depression). Aggressive and violent behaviour has grown worldwide. This study aims at assessing the psychological working environment of 229 employees from two business units in the county of Sibiu, Romania, by using the adapted version of the COPSOQ questionnaire. By applying the questionnaire, there have been identified certain characteristics of the psychological working environment, namely: increased requirements for group II, low control for group I, lack of professional satisfaction or lack of social support (for both groups). These results require certain corrective interventions.

**Cuvinte cheie:** stres, relații psiho-sociale, loc de muncă, constrângeri, control

**Rezumat:** Concomitent cu reducerea efortului fizic, dezvoltarea industrială aduce o creștere a solicitărilor neuro-psihiice la locul de muncă, ceea ce previzionează o creștere a tulburărilor psihiice stres-dependente în următorii ani (anxietatea și depresia). Comportamentul agresiv și violent a luat amploare pe plan mondial. Studiul de față își propune evaluarea mediului de lucru psihic la 229 angajați din două unități economice ale județului Sibiu, utilizând varianta adaptată pentru România a chestionarului COPSOQ. Prin aplicarea chestionarului s-au identificat anumite caracteristici ale mediului de lucru psihic, și anume: cerințe crescute pentru lotul II, control scăzut pentru lotul I, lipsa unei satisfacții profesionale sau lipsa suportului social (în cazul ambelor loturi). Aceste rezultate impun anumite intervenții corective.

## INTRODUCTION

Occupational health has a major potential influence. It has been estimated that 45% of the world population is part of the global workforce that supports the economy in our society. Consequently, occupational health and the wellbeing of employees are the crucial prerequisites of productivity, and play an essential part in sustainable socio-economic development. However, in spite of these important considerations, only 5-10% of the employees in the developing countries, as well as 20-50% of the industrialized countries has access to occupational health services. Industrial development has triggered a reduction in the physical effort concurrently with an increase in neuro-psychological demands and constraints. Hence, statistics predict an alarming growth in depressions and other stress-sensitive psychological disorders in the coming 20 years. The term „stress” was first described by Hans Selye in 1946, but now, the model of interaction between the individual, the socio-professional environment and inter-individual variations has also been added. (Theorell, 1991) Consequently, research into the multi-factor etiology specific for this interaction has developed in parallel. In our country, the term of psychopathology of work is still in the phase of being demonstrated and enacted and there is some reluctance in recognizing this pathology.

To put a diagnosis on work-related mental disorders is quite problematic since this should recognize a pattern of subjective symptoms potentially caused by work, rather than by

personal vulnerabilities.(1) Most of the observation studies have concluded that the following are job-related risk factors: too high demands from employees, absence of work control, lack of social support, imbalance between efforts and rewards, job dissatisfaction, hostile work environment, dangerous and particularly dangerous working conditions, harassment.(2,3) We find it important to present Romanian statistics about the mental health problems of the population at large and consequently, to quote the study carried out by Florescu and collaborators whose conclusion is that 8.2% of the adult population in Romania meets the criteria for mental disorder. High prevalence was reported for anxiety (4.9%) and mood disorders (2.3%), like dysthymia, major depressive disorders and bipolar disorder.(4) As for anxiety, specific fobia, social fobia, post-traumatic stress, panic disorder, alcohol abuse, with or without addiction, there has been an ascending trend with adults as compared to youngsters and a descending trend for age 65 and above. However, major depressive disorder has been on a progressive increase, with the highest occurrence in the elderly.(5)

Literature indicates that there can be no clear delimitation of occupational psychopathological descriptors but rather symptoms and signs of some reversible disorders, of multi-factor etiology, identified by researchers by means of questionnaires. Occupational psychosocial stress factors might generate some other disorders, like, hostile behaviour, and „escape” (alcohol, tobacco, drugs abuse), which are characteristic mainly for risk situations, like, harassment,

<sup>1</sup>Corresponding author: Mihaela Hărățău; Alexandru Donici St. no. 11, sector 2, Bucuresti, cod 020476, România, e-mail: mihaela.haratau@romtens.ro; tel: +40723163204

Article received on 28.10.2011 and accepted for publication on 21.01.2012  
ACTA MEDICA TRANSILVANICA March 2012;2(1):153-155

generalized abuse and violence at work, women being most vulnerable in these situations, especially in the presence of risk factors of harassment and abuse type.(6-8). Aggressive and violent behaviour has become widespread in the world and is currently being studied in socio-professional environments, such as the school.(9)

The Copenhagen questionnaire (COPSOQ), with its three versions: long (141 items), average (95 items) and short (44 items) is recommended for the job-related psychosocial factors evaluation. The questionnaire covers the current theories and concepts like the job features model, the Michigan model (based on identifying and measuring perceived stress), Karasek model (demands - control). The Karasek model is particularly important when it comes to planning the interventions since it considers a reduction in demands (ergonomization), an increase in control (flexible program) and in social support (from the supervisor).

### MATERIAL AND METHOD

The survey included 229 subjects divided into 2 sub-groups:

- Sub-group I, made up of workers exposed to organic solvents (111 subjects);
- Sub-group II, made up of workers with neuro-psycho-sensory strain (118 subjects).

The group exposed to organic solvents (chemical agents with effects on the CNS) was selected from among the employees of SC Roşu SRL Company, which manufactures leather goods and footwear.

Individual characteristics:

- Average age = 39.42±10.92 years,
- Average seniority in the same job = 14.65±10.62 years,
- Gender = 28.83% males and 71.17% females.

The group exposed to neuro-psycho-sensory strain has been selected from among the employees of a public company (The Department of Statistics), mainly characterized by office work and work with video-terminals.

Individual characteristics:

- Average age = 39.63±10.12 years,
- Average seniority in the same job = 16.56±10.41 years,
- Gender = 60.68% males and 39.32% females.

The main selection criterion was the age and the duration of exposure to the analyzed risk factors (at least 15 years of continuous exposure to solvents, that is, psychological stress).

### Application of COPSOQ Questionnaire regarding the psychological work environment

The 2006 short questionnaire includes 40 questions and identifies 23 characteristics of the psychological working environment. After the answers have been collected from a department or from an activity, the average score for the various items can be quickly calculated. The purpose of the COPSOQ Questionnaire (Copenhagen Psychosocial Questionnaire) is to facilitate the evaluation of the psychological working environment in a rapid and uniform way, without needing a computer or other technology. When all the persons filled in the questionnaire, scores of each of the first 19 items are added together. In most of the cases, there are two questions for each item and the two numbers put together indicate the answers of every person surveyed. In most of the cases, the scores obtained are between 0 and 8 points for an item. 229 questionnaires were applied, with the following items: work load, work pressure, psychological demands at work, influence at work, possibilities for personal development, importance of work, involvement at work, predictability at work, appreciation of work, clarity of roles, qualities of the leaders in the higher positions, the social

support from the direct managers, job satisfaction, the work – family conflict, confidence at work, equity at work, self-assessment of the health condition, physical and psychological burn out, stress at work, sexual harassment, threat of violence, physical violence, persecution at work.

### Applied statistical methods

The weighted average (**Wa**) and the standard deviations (**SD**) for all items as well as the difference between the two weighted averages of the two groups have been calculated in order to test the significance of the difference between the two groups. The test for identifying the significance of the difference between the items and dimensions grouped by pairs was applied by using the Statistics software and the result was an  $\alpha$  significance threshold and **P** probability (the minimum significance level:  $\alpha=5\%$  and **P=95%**).

### RESULTS

Table 1 presents the significant statistical difference between the groups regarding the weighted average score/item, the nature of the questions for which the prevailing answers of the two categories of subjects allowed for an appreciation of the psychological burden of their job. As seen in the table, every group made a significant score for 16 items (personal data-psychological work environment). For the items specific for the psychological working environment, there were more respondents in Group I of the survey (the rate was 15 / 13), as compared to Group II.

### DISCUSSIONS AND CONCLUSIONS

Until recently, the absence of some valid and easy measurement instruments hindered the employers in evaluating the psycho-social risk factors, and the standardized COPSOQ questionnaire emerged as an extremely useful instrument for an oversight of the psycho-social working environment, for all professions.(10) According to ISO 10075-3, COPSOQ is a screening instrument of level 2, placed between the orientation instruments (level 3) and the exact measurement instruments (level 1). The results of our research compared to the Danish and German results, after the application of COPSOQ, show similarities in the association of the following items: health and wellbeing, stress at work, work-family conflict, significance of work, leadership, predictability at work, psychological demands, development opportunities and clarity of roles.(11) Here are some conclusions of our research:

1. In the evaluation of the psychological working environment by COPSOQ questionnaire, the subjects exposed to organic solvents (group I) had a weighted score of answers which was higher than of group II for the items related to collaboration and leadership, the relation employee – work, values at work. These results indicate a low control of the workers at their jobs (according to the model „job demands-job control” by Karasek);
2. The COPSOQ evaluation of the subjects exposed to neuro-psycho-sensory strain (group II) indicates a weighted score of answers which was higher than that of the subjects in group I for the items regarding job demands, work organization and content, health and wellbeing. These significant results are very well associated to the Karasek’s „demands-control” model, in the version of the high job demands;
3. The subjects of group II of the survey have a high work speed, psychological demands at work and most importantly, stress at work almost all the time. The working environment for this group is considerably more psychologically challenging than the working environment of group I, in terms of the perceived risk;

## PUBLIC HEALTH AND MANAGEMENT

**Table no. 1. The significant difference between the two groups regarding the weighted average score/item (H1 = higher score for group I; H2 = higher score for group II**

No.	Accepted assumption	Item / Dimension	Average Group1	Standard deviation Group1	Average Group2	Standard deviation Group2	Difference average Group I – average Group II	Significance threshold	Probability
1	H1	Gen	1,71	0,46	1,39	0,49	0,32	0,01%	99,99%
2	H1	8B	2,89	1,11	2,44	1,11	0,45	0,25%	99,75%
3	H1	8	4,99	2,1	4,38	2,06	0,61	2,78%	97,22%
4	H1	9A	2,95	0,87	2,56	1,01	0,39	0,21%	99,79%
5	H1	9B	3,09	0,76	2,53	1,09	0,56	0,01%	99,99%
6	H1	9	6,04	1,41	5,09	1,97	0,95	0,01%	99,99%
7	H1	11B	3,27	0,84	2,79	1,1	0,48	0,03%	99,97%
8	H1	11	6,17	1,58	5,5	2,03	0,68	0,61%	99,39%
9	H1	12A	3,41	0,9	3	1,1	0,41	0,24%	99,76%
10	H1	12B	3,39	0,82	2,81	1,21	0,58	0,01%	99,99%
11	H1	12	6,79	1,5	5,81	2,21	0,98	0,01%	99,99%
12	H1	13	2,33	0,53	2,14	0,63	0,2	1,47%	98,53%
13	H1	16A	2,8	0,9	2,44	1,05	0,37	0,60%	99,40%
14	H1	16B	2,82	0,91	2,26	1,02	0,55	0,01%	99,99%
15	H1	16	5,62	1,57	4,7	1,91	0,92	0,01%	99,99%
16	H1	21_Colegi	0,15	0,13	0,09	0,27	0,06	3,51%	96,49%
17	H2	Level of training	2,53	0,66	4,17	0,97	-1,64	0,01%	99,99%
18	H2	Smoking	0,28	0,45	0,5	0,5	-0,22	0,06%	99,94%
19	H2	Years of smoking	4,13	7,94	8,44	11,3	-4,32	0,11%	99,89%
20	H2	2A	2,27	0,97	2,73	0,97	-0,46	0,04%	99,96%
21	H2	2	4,49	1,83	5,16	1,74	-0,68	0,50%	99,50%
22	H2	3A	1,09	1,05	1,71	1,17	-0,62	0,01%	99,99%
23	H2	3B	1,44	1,18	1,91	1,27	-0,47	0,42%	99,58%
24	H2	3	2,53	1,83	3,62	2,05	-1,09	0,01%	99,99%
25	H2	5B	2,2	1,21	2,71	1,15	-0,51	0,13%	99,87%
26	H2	19A	1,49	0,92	1,76	0,99	-0,27	3,42%	96,58%
27	H2	19B	1,14	0,9	1,56	0,95	-0,42	0,07%	99,93%
28	H2	19	2,62	1,61	3,32	1,83	-0,69	0,25%	99,75%
29	H2	21	0,37	0,09	0,5	0,13	-0,13	0,01%	99,99%
30	H2	21_Customers	0,07	0	0,17	0	-0,1	0,01%	99,99%
31	H2	23	0,12	0,16	0,24	0,09	-0,12	0,01%	99,99%
32	H2	23_Customers	0,02	0	0,08	0,09	-0,06	0,01%	99,99%

4. Certain characteristics of the working environment identified with the help of the questionnaire, more exactly, increasing demands for group II, low control group I, the lack of job satisfactions or the lack of social support (in case of both groups) can be considered a risk for the mental health of the employees, in the absence of some required corrective interventions.

- 2009;3:6-34.
- Michélsen H, Bildt C. Psychosocial conditions on and off the job and psychological ill health: depressive symptoms, impaired psychological wellbeing, heavy consumption of alcohol. *Occup Environ Med* 2003;60:489-496.
  - Niedhammer I, Chastang J, David S. Importance of psychosocial work factors on general health outcomes in the national French SUMER survey. *Occupational Medicine* 2008;58:15-24.
  - Richman J, Rospenda K, Nawyn S, Flaherty J, Fendrich M, Drum M, Johnson T. Sexual Harassment and Generalized Workplace Abuse Among University Employees: Prevalence and Mental Health Correlates. *American Journal of Public Health*. 1999;89(3):358-363.
  - Anderson C, Bushman B. Human Aggression. *Annual Review of Psychology*. 2002;53:27-51.
  - Kristensen T, Hannerz H, Høgh A, Borg V. The Copenhagen Psychosocial Questionnaire (COPSOQ)-a tool for the assessment and improvement of the psychosocial work environment. *Scand J Work Environ Health*. 2005;31:438-449.
  - Nübling M, Stöbel U, Hasselhorn H, Michaelis M, Hofmann F. Measuring psychological stress and strain at work: Evaluation of the COPSOQ Questionnaire in Germany. *GMS Psycho-Social-Medicine*. 2006;3:1-14.

### REFERENCES

- Poole C. Safe systems of work are needed for the diagnosis of occupational mental illness. *Occupational Medicine*. 2008;58:5-6.
- Faragher E, Cass M, Cooper C. The relationship between job satisfaction and health: a meta-analysis. *Occup Env Med*. 2005;62:105-112.
- Karasek RA. Job demands, decision latitude and mental strain: implications for job redesign. *Adm Sci Q*. 1979;24:285-309.
- Florescu S, Moldovan M, Mihăescu-Pinția C, Ciutan M, Sorel GE. Studiul de sănătate mintală România 2007: prevalența în ultimele 12 luni, severitatea și tratamentul tulburărilor mintale, conform clasificăției DSM-IV. *Management în sănătate*. 2009;4:26-34.
- Florescu S, Ciutan M, Popovici G, Galaon M, Ladea M, Pethukova M, Hoffnagle A. Studiul privind sănătatea mentală România: aspecte principale ale prevalenței pe durata vieții și utilizării serviciilor în cazul tulburărilor mentale conform DSM-IV. *Management în sănătate*.