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THE REDUCING OF THE TEMPORARY WORK INCAPACITY (TWI) IN PROFESSIONS WITH NEURO-PSYCHIC OVERLOADING BY PSYCHOLOGICAL METHODS AND SIGNIFICANCE OF THE ECONOMIC IMPACT

Abstract:

Psychosocial risks and work-related stress are among the most challenging issues in occupational safety and health. The impact is significantly on the health of individuals and organizations management and national economies. Around half of European workers consider stress to be common in their workplace, and it contributes to around half of all lost working days. Like many other issues surrounding mental health, stress is often misunderstood or stigmatized. However, when viewed as an organizational issue rather than an individual fault, psychosocial risks and stress can be just as manageable as any other workplace health and safety risk.

For the organization, the negative effects include poor overall business performance, increased absenteeism, presenters (workers turning up for work when they are still sick and unable to function effectively) and increased accident and injury rates. Absences tend to be longer than those arising from other causes and work-related stress may contribute to increased rates of early retirement, particularly among white-collar workers. Estimates of the cost to businesses and society are significant and run into billions of Euros at a national level. Stress is the second most frequently reported work-related health problem in Europe.

□The authors make an analysis of the consequences of the occupational stress in an institution of Arad city, from the point of view of some indices which are required for the health state of the employees: the TWI index (temporary work incapacity), the structure index, the frequency index, the gravity index, the medium term index.

□They propose as a method to diminish stress and to increase the economic efficiency of the institution that the employees benefit from a psychological support reflected in cognitive-behavioral psychotherapy and elements of relaxation training. After the use of these methods for a period of three months the indices were calculated again and compared with the beginning situation. For the prevention, taking into account the type of overworking to the workplace are made annual, beside the periodical medical controls, also some supplementary examinations.

Keywords:

Professional neuropsychological overloading, health state, temporary work incapacity, epidemiological indices, psychotherapy and relaxation techniques, prevention

JEL Classification: I19, I18, J24

Problem statement

Psychosocial risks and work-related stress are among the most challenging issues in occupational safety and health. They impact significantly on the health of individuals, organizations and national economies. Around half of European workers consider stress to be common in their workplace and it contributes to around half of all lost working days. Like many other issues surrounding mental health, stress is often misunderstood or stigmatized. However, when viewed as an organizational issue rather than an individual fault, psychosocial risks and stress can be just as manageable as any other workplace health and safety risk.

For the organization, the negative effects include poor overall business performance, increased absenteeism, presenters (workers turning up for work when they are still sick and unable to function effectively) and increased accident and injury rates. Absences tend to be longer than those arising from other causes and work-related stress may contribute to increased rates of early retirement, particularly among white-collar workers. Estimates of the cost to businesses and society are significant and run into billions of Euros at a national level. Stress is the second most frequently reported work-related health problem in Europe.

Psychosocial risks arise from poor work design, organization and management, as well as a poor social context of work, and they may result in negative psychological, physical and social outcomes such as work-related stress, burnout or depression¹.

With the right approach, psychosocial risks and work-related stress can be prevented and successfully managed, regardless of business size or type. They can be tackled in the same logical and systematic way as other workplace health and safety risks.

Managing stress is not just a moral obligation and a good investment for employers, it is a legal imperative set out in *Framework Directive 89/391/EEC*, supported by the social partners' framework agreements on work-related stress and harassment and violence at work².

Furthermore, the European Pact for Mental Health and Well-being recognizes the changing demands and increasing pressures in the workplace and encourages employers to implement additional, voluntary measures to promote mental well-being.

The World Health Organization defines health as "a state of complete well physical, mental and social and not only the absence of disease or infirmity". Latter was included in this definition also "the ability to lead a socially and economically productive life"³. According to this concept, the human individual is perceived as a whole bio-psycho-social, and his health is a complex balance between body and environment, the body can adapt to the environment (homeostasis). This homeostasis is maintained with sanogenous factors (sanogenetic factors).

By sanogenetic factors it is understand any condition scientifically proven that by its presence helps to maintain or improve health. This can contribute to maintaining the health of a human individual through a proper behavior, reducing risk factors.

$$\text{Health} = \text{Sanogenous Factors} / \text{Risk Factors} > 1^4$$

The measurement of health status in a population is achieved through the following indicators (adapted from Enăchescu, Mark, 1998)⁵:

Level indicators:

¹ Micluția, I., *Psihiatrie*, Ed. Medicală Universitară Iuliu Hațieganu, Cluj-Napoca, 2002

² W.H.O., (2002), *Reducing risks, promoting healthy life, World Health Report*, Geneva

³ Charles, J., (1968), *Origins, history and achievements of the World Health Organization*, Br Med J. May 4, 1968; 2(5600): 293–296.

⁴ Gavrilă, A.M., Gavrilă, A.L., (2011), *Internal medicine and social element:courses notes*,Editura Mirton, Timișoara, p. 10

⁵ Enăchescu, D., Marcu, M., (1998), *Sănătate Publică și Management Sanitar*, Editura All, București

- Demographic indicators: birth, death, etc.;
- Morbidity indicators: classic indicators, the consequences of the disease (deficiency, incapacity, disability), gravity (in scores) and combinations thereof;
- Global indicators of health that considers the functional incapacity and illness or health perception;

Indicators of health determinants:

- Biological factors (heredity, demographic characteristics of the population studied);
- Environmental factors (social, cultural, educational, habitat);
- Behaviors (food, professional, physical activity, stress levels etc.).
- Health services (resources, share the type of health care: preventive, curative, rehabilitation, accessibility, and addressability of the population for health care);

Complex indicators (resulted from different combinations).

It has been shown that longevity and vitality of a human individual not only know genetic determinism, but it is influenced by: the personal style of life, the activity, the level of daily stress and the vocational health. The personal style of life is given by the type of behavior, which in turn is influenced by the social and existential context of the individual (traditions, lifestyle habits, education level etc.).

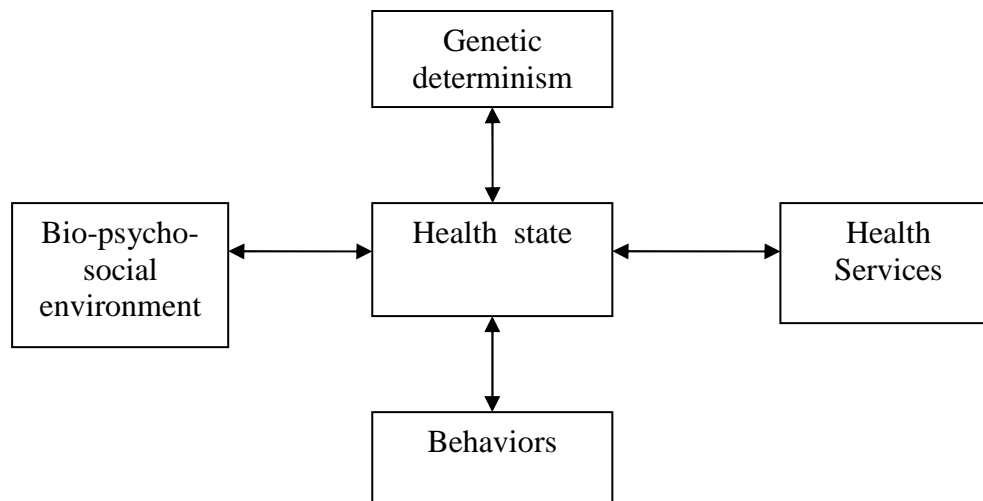


Figure 1. Epidemiological model of the determinants of health status (adapted from Denver in Enăchescu, Mark, 1998)⁶

We thus conclude that the lifestyle of an individual is the sum of its behaviors conditioned by the social context of the existential moment⁷.

In the internal medicine and social medicine are used a series of epidemiological concepts such as morbidity with temporary work incapacity (TWI), structure indices, indices of dynamic the frequency index, the severity index, the medium term index.

These notions show applicability in different fields of science: demographics, social medicine, public health, social policies for health and health care, social and medico-social assistance⁸.

⁶ ibidem

⁷ Gavrilă, A.M., Gavrilă, A.L., (2011), *Internal medicine and social element:courses notes*, Editura Mirton, Timișoara, p. 13

⁸ Gavrilă-Ardelean, M.F., (2008), *Social policies for health: health insurance, contributions to health services management*, University Publishing House "Aurel Vlaicu", Arad

Morbidity with temporary work incapacity (TWI) completes the morbidity study with specific aspects related to the pathology of the working population engaged in the work field. Morbidity with TWI is based on the medical sick leave certificate, forensic and financial act under the control and refers to diseases that have a certain degree of gravity which causes disruption of work activity⁹.

The indices that are expressing the morbidity with TWI are of two typesic:

- Structure indices (on cases, on days of TWI);
- Dynamic indices (index of frequency, severity and medium term indices).

Structure indices allow us to calculate the number of new cases of illness and number of days of temporary work incapacity (days of sick leave) by a disease or group of diseases in 100 cases of illness and respectively 100 days of work incapacity, that we can determine which diseases are the most frequently ill of the employees of an industrial community, or a certain section (Ursoniu, 1996)¹⁰. In this formula the new case is considered from when it was found unable to work, till the day when it resumes work, to every sick leave with TWI granted (even if it is the same disease).

The usefulness of these indicators lies in finding the peak of morbidity, with the possibility of implementing professional preventive strategies to the workplace (exhaust gas).

Dynamic indices are represented by the frequency index, the index of gravity and the medium term index. They can be computed by disease or group of diseases.

Frequency index shows the number of new cases of disease (initial sick leave) for 100 employees in a period (quarterly, annually). Reflects the disease incidence in the enterprise, but also the addressability and accessibility to health services and, subsequently, their quality¹¹.

Severity index value is obtained from the total number of days with TWI in a certain time period to 100 employees and reflects the severity of the disease now under study, which correlates with the precocity of diagnosis and the curative treatment setting¹².

Medium term index is obtained by reporting the days number of sick leave with temporary work incapacity (TWI) to all new cases of disease (number of initial sick leave) for an unit time.

This indicator reflects the average duration of a case of disease, namely the addressability, the accessibility and the quality of medical services provided, related to the individual response¹³.

Hypothesis

We supposed that if we use adequate methods (cognitive-behavioral therapy and relaxation techniques) we can reduce the number of days with temporary work incapacity and improve the health state of the employees, reducing costs and improving economic indicators and morbidity

Studied sample

We included in the sample a number of 46 employees from a company in Arad County, with financial investment activities. The gender distribution of our studied sample shows a number of 21 women and a number of 25 men. The table 1 presents the type of solicitation to which were exposed the subjects.

⁹ Gavrilă, A.M., Gavrilă, A.L., (2011), *Internal medicine and social element:courses notes*,Editura Mirton, Timișoara, p. 44

¹⁰ Ursoniu, S., (1996), *Medicină Socială*, Editura Mirton, Timișoara, p.45

¹¹ Gavrilă, A.M., Gavrilă, A.L., (2011), *Internal medicine and social element:courses notes*,Editura Mirton, Timișoara, p. 46

¹² ibidem

¹³ Gavrilă, A.M., Gavrilă, A.L., (2011), *Internal medicine and social element:courses notes*,Editura Mirton, Timișoara, p. 47

Table 1
The solicitation to which were exposed the subjects

Type of solicitation	Job	number
Overloading of visual and additive analyzers Neuro-psyhic overloading	drivers	3
Stress overloading without nuisance	janitor cleaning	2
Overloading of visual analyzer Neuro-psyhic overloading	white-collar workers	31
Overloading of visual and additive analyzers Neuro-psyhic overloading Stress (work during night-time)	security agents	2

Methodology:

We considered the annual medical data reported at the end of 2013 to the Public Health Direction, Arad. Were calculated and reported the indicators mentioned in the theoretical part: the index of frequency, the severity index and the medium term index by the formulas given below.

The calculation of the frequency index of illness in an enterprise is using the formula:

$$\text{Frequency index} = \frac{\text{New cases of illness}}{\text{Number of employees}} \times 100$$

The calculation of severity index uses the formula:

$$\text{Severity index} = \frac{\text{Number of WIT days}}{\text{Number of employees}} \times 100$$

The medium term index calculation is as follows:

$$\text{Medium term index} = \frac{\text{Number of WTI days}}{\text{New cases of illness}}$$

In addition the 40 subjects was given to complet the occupational stress scale of the Self-Assessment Stress Inventory¹⁴ to appreciate the degree to which they feel stressed at work.

¹⁴ Moldovan, O.D., (2006), *Stress si adolescenta*, Editura Universităţii „Aurel Vlaicu”, Arad, pp.149-150

Research conducting:

The research was conducted in the first quarter this year, 2014, in the months of January, February and March 2014. The occupational stress scale was applied at the beginning and the end of the research investigation. During the three months, the subjects received cognitive behavioral therapy in weekly sessions and were taught relaxation techniques after the Schultz Autogenic Trainings model.

Results and discussions:

At the end of the fourth quarter 2013 were reported the following data:

Number of periodic medical examinations to reporting date (fourth quarter 2013): 41,
which were taken in evidence with chronic diseases /fourth quarter 2013: 20

Pregnant/ fourth quarter 2013: 1

No. of initial medical leave /fourth quarter 2013: 4

No. of total days released (for sick leave) with TWI: 143

Were calculated the following indicators (see Table 2)

Table 2

Indicators reported for the quarter IV / 2013

Indicator	Value
Frequency index	9
Severity index	311
Medium term index	36

In the reports made at the end of the fourth quarter / 2013, in the first five positions of morbidity were located the next diagnoses:

1. Leiomyoma of the uterus
2. *Reaction to a major stressor and adjustment disorder*
3. AIURT (acute infections of the upper respiratory tract)
- 4-5. Personal and family history that can pose a risk of latent disease and some disorders affecting health status.

The diagnosis with the code 325: *reaction to a major stressor and adjustment disorder*, ranked second in terms of morbidity.

At the end of the fourth quarter of 2013 subjects were given to complete the occupational stress experienced subscale of the Self-Assessment Stress Inventory of Melgosa. The results of our study can be seen in Table 3.

Table 3

The results of the sample to the Occupational Stress Subscale at the first evaluation (the end of the quarter 4 – 2013)

	Average	Standard deviation
Sample	30.19	5.04

For three months subjects received cognitive behavioral psychotherapy with a frequency of one session per week¹⁵ and were taught some relaxation techniques taken by Schultz autogenous method of training.

At the end of the first quarter of 2014 we have calculated again the same data as earlier in the research:

No. of periodic medical examinations to reporting date (first quarter 2014): 41,
which were taken in evidence with chronic diseases / first quarter 2014: 20

Pregnant / first quarter 2014: 1

No. of initial medical leave / first quarter 2014: 9

No. of total days released (for sick leave) with TWI: 125

¹⁵ Moldovan, O.D., (2006), *Stress si adolescenta*, Editura Universităţii „Aurel Vlaicu”, Arad, pp.123-130

We present the TWI indices four quarterly 2013 versus first quarterly 2014 in Table 4:

Table 4
TWI indices: the fourth quarter 2013 versus the first quarter 2014

Indicator	Value	
	the fourth quarter 2013	the first quarter 2014
Frequency index	9	20
Severity index	311	227
Medium term index	36	14

The table analysis shows a decrease in the severity index of 311 to 227 and medium term indicator from 36 to 14. It shows a reduction in the number of sick leave days for diagnosis code 327 - *Reaction to an important stress factor and adjustment disorder*. The sick leaves with diagnosis code 327 (*reaction to major stress factor and adjustment disorder*) down in position 7 in the hierarchy of morbidity with TWI reducing the number of days with TWI for this diagnosis. In the first quarter 2014 the morbidity hierarchy is the following:

1. Persons addressing health services for reproductive reasons
2. Back pains
3. Sick child care (pharyngitis and tonsillitis)
4. Varicella
5. Acute sinusitis
6. Spondylosis
7. *Reaction to an important stress factor and adjustment disorder*

The reduction of the TWI days number correlates directly proportional to the associated economic costs, both for the institution (cost of the first 5 days of sick leave is paid by the employer, and the rest is paid by the Health Insurance House - the national budget of the social health insurance) as well as for the individual. The contribution for sick leaves and compensation at the rate of 0.85% is due only to health insurance indemnities paid from the funds of the employer. The calculation basis is the amount paid as compensation for temporary work incapacity. In conclusion, in the calculation base on which are applied the 5.5% individual health contribution and the rate of 5.2% health contribution payable by the employer are included the revenue related to the worked days by the employee and resuming work supported in payroll.

The results mean also, that it took place in the same time an increasing of the addressability, the accessibility and the quality of medical services offered to early diagnose and solve of the health problem, with rapid return to work.

The Frequency index is higher in the first quarter of 2014, but this is due to the granting of a greater number of initial medical leave on other TWI diagnostic codes. It follows that although the morbidity by the diagnosis *reaction to a major stressor and adjustment disorder* decreased, the frequency index is increased due to new cases of other pathology.

Based on these results we can say that the methods used by us (the cognitive behavioral therapy and the relaxation techniques Schultz) helped to reduce the value of these indicators, with their improvement.

For occupational stress subscale, the comparative value of the stress felt by subjects comparative at the two evaluations is shown in Table 5.

Table 5
The comparative values for the Occupational Stress Subscale

	Average	Standard deviation
First evaluation	23.27	3.76
Second evaluation	25.4	5.83

The differences between the averages of the two evaluations calculated by Student's t test is statistically significant: $t = 2.57$, at a significance threshold of $p < .01$.

It is a further proof that the methods used by us (cognitive behavioral therapy and relaxation techniques) had a beneficial influence on subjects, causing them to feel stress with a lower intensity and to deal with it better. This shows that the assumptions made by us at the beginning of the research was validate in practice by the results we gathered during the research.

Monthly are made by the medical staff, medical checks in institution, aiming at the working and sanitary conditions and these were appropriated. The medical checkups on demand and whenever needed, take place at the institution place and is made by the medical staff of the medical cabinet: CMI DR. Ardelean Gavrilă-Mihaela.

Conclusions:

The occupational stress can be an important factor that could produce different psychosomatic troubles if it is not treat from the begining. The consequences for the individual life, for the work team and, finally, for the organization and the society are great and need to be take into account for being prevented.

The learning of some relaxation techniques and the support of a cognitive behavioral therapy makes that the sample of subjects records a statistic significant diminution of the occupational stress which is reflected also in the indicators calculated by us.

We consider that the used methods with the purpose of reducing stress to the employees, may be used successfully also in preventive purpose and in the occupational stress prophylaxy.

For prevention, depending on the type of overload at work are made annual periodic medical checks and examinations supplemented. For example, in our case, those with neuropsychic overloading as: the display screen office work (computer), with theme of study the capital market for investment (here are pressing tasks per unit of time, concentrated attention for long time, attention distribution, value of money to be invested, are not allowed errors, prolonged sitting position etc.). In this context, we developed an ergonomics program to display screen work: visual gymnastics to avoid static musculoskeletal disorders, adaptation and functional office furniture, will introduce a motion break of 10 minutes to 1 hour and other methods and preventive service packages and improve labor efficiency, in collaboration with the management of the institution. For drivers and security agents without a weapon, but night work alone in the post, for them are made annual examination and psychological screening.

Following the results of our research we would like to discuss with the management of the institution the implementation for the employees with occupational neuropsychic strain of a prophylaxis program of psychotherapy and relaxation techniques of Schultz autogenous type in order to improve working efficiency and performance indicators work and prevent psycho-emotional exhaustion, the adjustment disorders stress and with the reduction of the economic costs related to this type of morbidity.

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