ASSESSMENT OF PSYCHOSOCIAL RISK FACTORS IN LITHUANIAN CONSTRUCTION COMPANIES

Laura Urnikytė¹, Kazys Algirdas Kaminskas²

¹Vilnius Gediminas Technical University, Saulėtekio al. 11, LT-10223 Vilnius, Lithuania.
   E-mail: laura.urnikyte@gmail.com

²Vilnius Gediminas Technical University, Saulėtekio al. 11, LT-10223 Vilnius, Lithuania.
   E-mail: algirdas.kaminskas@vgtu.lt

Abstract. Psychosocial factors cause stress at work, which after general tiredness and back pains, takes the third place in the European Union of all the most common health problems related to work. Companies in construction field are no exception. Workers are experiencing not only physical but also psychical pressure as they regularly have to work to meet a deadline and in hazardous work environment. The aim of this paper was to examine the manifestation of psychosocial risk factors and to identify the causes of emerge in order to provide against these factors. The research was performed using two questionnaires. An assessment of stress at work according to psychosocial work factors and stressful reactions of worker was used to create first questionnaire. The second questionnaire was used according to burnout syndrome. A total of 5 companies have participated of 57 subjects.

The study revealed that workers are feeling the biggest stress when their opinions are not taken into account and when they do have to rush while doing their tasks. Furthermore, younger married males without higher education are influenced by psychosocial risk factors the most. In general, this kind of risk factors is not judged very seriously in Lithuanian companies and especially in construction and need to be more highlighted and estimated. This research will give the basic knowledge of psychosocial risk factors, possible solutions and vulnerable people groups.

Keywords: psychosocial factor, stress, environment, burnout syndrome, worker, reaction.

Introduction

The World Health Organization accepts mental health as one of the most important spheres of public health at the beginning of the XXI century. It was proved that mental health disorders are becoming one of the most important groups of illnesses according to economical and social burdens (Leka et al. 2003).

The relation of work environment and health is very complicated. Work is a source of self-realisation, social contacts and financial safety and these things are necessary for having good mental health. On the other hand, badly organised, unsafe work can occur to the reason of many health problems as well as mental ones. The illnesses of working people cost mostly expensively for society as the indirect cost of treatment can be added to the direct (Stanislovovienė 2009).

Psychosocial factors cause stress at work, which after general tiredness and back pains, takes the third place in the European Union of all the most common health problems related to work. 28% of employees complain because of the stress at work. It was counted that 31% of all days off are because of psychological problems, 29% – because of physical disability.

At present, the influence of the three factors – biological, psychological and social – on mental health and its disorders is thought to be equally important. Biopsychosocial and its inner balance is very important assumption while preparing and carrying out today’s strategies of mental health. It is considered that aiming to save the health of a person or the society is needed to put enough attention to the surrounding in which a person spends most his or her time, mainly, work, school, family.

However, it is quite hard to assess and record psychosocial factors. To do that properly one needs to have specific knowledge and experience. It is difficult because most concepts of the psychosocial factors are very hard to precisely identify. What is more, these factors depend on the subjective perception of worker’s environment (Pajarškinienė, Jankauskas 1998).

First of all it is very important to indicate the concept of psychosocial factor. Giedraititytė (2004) in her article gives the definition by Hemingway (1999) which proposes explanation that psychosocial factor is a compound term and it is an impact of psychological (e.g.
mood) and social (e.g. stress at work) factors for physiological processes.

Meanwhile, the Health and Safety Executive of Great Britain enlarges the explanation of what psychosocial factors are. Apart from this, the institution not only tells the coming reasons but also gives tips how to avoid them.

Psychosocial risk factors are elements that may affect workers’ psychological response to their work and workplace conditions (including working relationships with supervisors and colleagues), e.g., high workloads, tight deadlines, lack of control of the work and working methods.

As well as leading to stress, which is a hazard in its own right, psychosocial risk factors can lead to musculoskeletal disorders, e.g., there can be stress-related changes in the body (such as increased muscle tension) that can make people more susceptible to musculoskeletal problems; or individuals may change their behaviour, for example doing without rest breaks to cope with deadlines. The research on the construction workers workload under the two work conditions show that stress, deadlines. The research on the construction workers workload under the two work conditions show that stress, mainly the mental one, is lower in the ergonomic condition indicating that the workload can be reduced by designing the tasks according to the workers capabilities (Guimarães, Saurin 2006; Kaminskas 2007).

So both the physical and psychosocial factors need to be identified and controlled in order to have the greatest benefit. The best way to achieve this is by using an ergonomic approach, which looks at achieving the best “fit” between the work, the working environment and the needs and capabilities of the workers.

Many jobs are not well designed and include some or all of the following undesirable features, which may lead to psychosocial risks:

- workers have little control over their work and work methods (including shift patterns);
- workers are unable to make full use of their skills;
- workers, as a rule, are not involved in making decisions that affect them;
- workers are expected to only carry out repetitive, monotonous tasks;
- work is machine or system paced (and may be monitored inappropriately);
- work demands are perceived as excessive;
- payment systems encourage working too quickly or without breaks;
- work systems limit opportunities for social interaction;
- high levels of effort are not balanced by sufficient reward (resources, remuneration, self-esteem, status).

As with physical risk factors, psychosocial issues are best addressed with full consultation and involvement of the workforce.

Consider the following control measures that can be often being applied to improve the working environment within your workplace:

- reducing the monotony of tasks where appropriate;
- ensuring there are reasonable work load (neither too much or too little) deadlines and demands;
- ensuring good communication and reporting of problems;
- encouraging teamwork;
- monitoring and control shiftwork or overtime working;
- reducing or monitoring payment systems which work on piece rate;
- providing appropriate training (Management of… 1999).

While reading sources about psychosocial factors impact on health, the term stress is very common. Stress is a transitional condition of organism between risk factor and the later its impact on health. The stress theory was created by Hans Selye after in 1936 he published his first scientific paper to identify and define stress term (Canadian Institute… 2007).

Stress consists of a pattern of ‘stone-age’ reactions preparing the human organism for fight or flight, i.e., for physical activity. Stress was adequate when stone-age man was facing a wolf pack, but not so when today’s worker is struggling to adjust to rotating shifts, highly monotonous and fragmented tasks or threatening or over-demanding customers. It is often maladaptive and disease-provoking.

Pathogenic mechanisms include:

- emotional reactions (anxiety, depression, hypochondria, and alienation);
- cognitive reactions (difficulty in concentrating, remembering, learning new things, being creative, making decisions);
- behavioural reactions (abuse of drugs, alcohol, and tobacco; destructive and self-destructive behaviour, and inhibitions about seeking and accepting the offer of therapy and rehabilitation);
- psychological reactions (neuroendocrine and immunological dysfunction) (Levi 2002).

Apart from the psychosocial risk factors, the concept of burnout syndrome is very common describing emotional satiety. The burnout syndrome may be defined as a complex phenomenon which is characterized by three components: emotional exhaustion (physical and psychological exhaustion, incapability to carry on requirements), depersonalization (cynical attitude towards performed work, duties, cold or negative reaction to the patients), and personal accomplishment (reflected by the sense of incompetence, the lack of efficiency and achievements).

This process is progressing slowly for a long time and is characterized individually by various psychological and physical symptoms of different intensity (Vimanta, Šeškevičius 2006).

In 1974 psychologist Herbert J. Freudenberger introduced concept of burnout syndrome in order to define the psychological and physical exhaustion of people who are rendering assistance. Later the specialist of social psy-
Psychology Christina Maslach from Berkeley University (California) had investigated these questions.

**Applied Methods**

Psychosocial risk factors are investigated by using methods which were instituted by the laws of the Republic of Lithuania or some qualified international organizations, e.g., The World Health Organization, International Labour Organization, etc.

To identify and estimate the stress in construction companies of Lithuania, the recommendations of Lithuania’s Hygiene Institute for stress assessment questionnaire were used. The very first and original questionnaire was created by Finnish Institute of Occupational Health and called Occupational Stress Questionnaire (1992). Pajarskiene and Jankauskas (1998) according to this questionnaire have wrote and established the recommendations “Assessment of stress at work according to psychosocial work factors and stressful reactions of worker”. The modified questionnaire (Q-1) was created by K. A. Kaminskas and used to investigate psychosocial risk factors.

This questionnaire consists not only of main work planning and complexion but also of intercommunication between colleagues and other people.

The questionnaire consists of four groups of questions:
- personal data, i.e., gender, age group, marital status, education;
- controlled factors (M), i.e., possibilities of impact and social relationship;
- realized environment (E), i.e., characteristics of work, stress factors and mental work requirements;
- stress and satisfaction (SS), i.e., work and life satisfaction, psychical resources and reactions to stress.

What is more, the fifth group of questions was added in order to identify some new coming psychosocial factors (N) and their impact on people.

All in all 31 questions were given to subjects. All questions were rated according to level of impact intensity by using 5-point Likert scales, i.e., answer “Never” was rated 1, “Seldom” – 2, “Sometimes” – 3, “Often” – 4 and “Always” – 5.

In addition, burnout syndrome questionnaire (Q-2) given to subjects and answers were analyzed in order to compare, if the stressful work environment is caused by the same or maybe different items. 15 questions were also rated with 5-point Likert scales and the same order as the questionnaire mentioned above.

**Sample and Procedure**

There were 57 subjects from 5 different companies selected to participate in the research. As it is seen from Fig 1, half of the subjects (31 or 55 %) are less than 35 years old, i.e., 18% of respondents are 24 or less, 18 % – from 25 to 29 and 19 % – from 20 to 34. The rest age groups do not peak so high. Another half of subjects indicated themselves to be more than 35 years old. It should be noted that 3 subjects (5 %) did not indicated their age.

The sample was less in testing burnout syndrome and subjects were not from 5 but from 3 companies. As the means were compared and number of subjects is more than 30, the size of the sample shrank insignificantly.

**Fig 1. Distribution of subjects by age group**

The other personal data like gender, marital status and subjects’ education are shown in Table 1. Due to the collected data, the following comparisons had been done:
- people under 35 years old versus people 35 years old and more,
- male versus female,
- married versus living alone,
- persons with higher educations versus persons without it.

**Table 1. Personal data of subjects**

<table>
<thead>
<tr>
<th>Personal Data</th>
<th>Number of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>33 (58 %)</td>
</tr>
<tr>
<td>Female</td>
<td>24 (42 %)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Not Married</td>
<td>13 (23 %)</td>
</tr>
<tr>
<td>Married</td>
<td>34 (60 %)</td>
</tr>
<tr>
<td>Divorced</td>
<td>5 (9 %)</td>
</tr>
<tr>
<td>Widow (-er)</td>
<td>3 (5 %)</td>
</tr>
<tr>
<td>No Answer</td>
<td>2 (3 %)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Unfinished Secondary</td>
<td>1 (2 %)</td>
</tr>
<tr>
<td>Secondary</td>
<td>18 (32 %)</td>
</tr>
<tr>
<td>Further Education</td>
<td>12 (21 %)</td>
</tr>
<tr>
<td>Higher Non-University Education</td>
<td>3 (5 %)</td>
</tr>
<tr>
<td>Higher University Education</td>
<td>20 (35 %)</td>
</tr>
<tr>
<td>No Answer</td>
<td>3 (5 %)</td>
</tr>
</tbody>
</table>

**Statistical Analyses and Results**

To compare the ratings of questions, the averages of scores were counted and Fig 2 represents the distribution
of them. The most intense work factors are those which average seeks 2.5 and more.

In the group of controlled factors, the most intense and stressful factor is not taking account of worker’s opinion in doing the task (3.1).

In the group of realized environment factors, the most stressful factor is when a person has to rush at work (3.1). No variety of tasks and monotony (3.0) make a person also feel quite bad. Mental and physical pressures (each 2.8) are the next factors which makes work unpleasant.

In the question group of stress and satisfaction, the most rated questions were about the fatigue (2.8). Feeling stress (2.6), not feeling satisfaction of life (2.6) but irritation (2.6) and anxiety (2.6) – are the feelings which are meat by many working people.

New psychosocial factors were not rated so greatly as old ones, but balance between work and personal life (2.5) should be considered and tried to be avoided.

Some features were tested in order to find out if they correlated significantly when the significant level is $\alpha = 0.05$. Issues were taken from one and another questionnaire.

A significant relationship was found between exhaustion (feeling having no physical or emotional strength) and mental pressure ($r = 0.43$). The relationship between exhaustion and physical pressure was not found ($r = -0.26$). Negative attitude to work was negatively correlated with satisfaction of work ($r = 0.53$). The more satisfied participants were with the relationship with colleagues, the more they felt understood and appreciated by colleagues ($r = 0.52$). Feeling enlarged emotional load at work correlates with feeling permanent emotional pressure ($r = 0.41$).

Fig 3. Burnout syndrome averages of all questions

Fig 4. The main statistical parameters
In Fig 4 the parameters of rated answers are shown and it should be noted that standard deviation which is under 1.0 gives us a perception of more homogeneous evaluation of the particular issues. The wider the range between upper and lower boundaries, the more various are the evaluations.

To compare the same questions by different dimensions, i.e., see which questions are significantly different by answering male and female, persons with higher education and without it, etc., the Student’s Two Sample t-Test was conducted with the significant level 95 %.

The subjects were divided into two groups by their age. The first group consists of people who are under 35 years old and (55 % belongs to this group). The second group – people who are 35 years and older (40 % of respondents are in this group). 5 % of subjects were eliminated for this comparison as some people did not identified their age.

Fig 5 represents three questions from all 31, which differ statistically significant by averages. It is clearly seen, that people under 35 years old feel more stressed than people who are 35 years and older. Significant different is when taking about hard periods at work, mental pressure and irritation feeling. People who are 35 years and older tolerate hard periods better, mental pressure and they are not so irritated.

Willing to know how the stress depends on workers by gender, comparison by male and female answers has been done. 33 (58 %) male and 24 (42 %) female have participated in the research.

Fig 6 shows the questions which differ significantly. Male feel more physical pressure, it harder for them to evaluate their work by themselves and feel more stressed than female when they have to work prolonged day. However, female feel more stressed when they were asked about their age and learning possibilities.

The subjects were divided into two groups due to find out how the marital status influences the stress at work. The first group consists of married people and 34 (60 %) subjects belong to it. The second group – all the people who are not married, are divorced or widow (-er). Generally this group is named “Living alone” and 21 (37 %) of subjects belong to it 3 % of subjects were eliminated as they did not identified their marital status.

Fig 7 shows that just two questions differ significantly. Married people are more concerned about their work usefulness and new forms of work contracts.

The last dimension which was checked is education. Subjects were divided into two groups – people without higher education (23 subjects or 40 %) and with higher education (31 subjects or 55 %). 5 % of subjects were eliminated as they did not identified their education.

Fig 8 represents that people without higher education felt more stressed than people who have higher education. When subjects were asked, do they feel that their opinion on work related issues is taking into account, people with higher education answered that their opinion is appreciated. It was opposite with people without higher education. People with higher education can evaluate their work better as well. They feel more satisfaction of life and less depressed mood.
Discussion and Conclusion

After looking to all questions and all subjects, it came clear that the biggest risk and stress is when one’s opinion on work issues is not taking into account (3.1). The second risk factor is lack variety if tasks at work (3.0). And in third place are mental and physical pressures and fatigue (each 2.8).

Younger workers are stressed more, especially, at hard periods at work. They feel more mental pressure and are more irritated by other people.

Male feel more physical pressure than female. Also it is harder for them to evaluate their work and they feel stressed when they have to work prolonged day. Although, women feel more stressed when they put into consideration their age and possibilities to learn.

Married people are worrying about their work usefulness and new forms of work contracts make them feel stressful.

Having higher education makes people feel more satisfaction of life and less depressed. Their opinion on work issues is more appreciated and they can easier evaluate when their work has been done well.

Since the 1995s, work intensification has occurred in Lithuania and other EU countries. Work intensification is directly linked to densification of work and a higher pace of work; thus it increases physical and/or mental change. The development of stress and musculoskeletal diseases as well as an increase in injuries at work become more likely.

References

