ABSTRACT

A survey was performed in 2008 on a representative stratified sample of 245 railroad employees in Slovenia (168 blue-collar and 77 white-collar workers) with the aim of exploring different dimensions of workers' lifestyle health. For this purpose a special questionnaire was developed. The intensity of perceived job stress was measured with one general index based on a 4-point ordinal scale. There were 54.3% of employees who perceived their work as stressful or very stressful. No significant differences between blue- and white-collar workers were found.

Twenty-six dimensions of lifestyle were measured. There were 66.9% of interviewed employees who were found to be overweight or obese (BMI 25 or higher). Differences in lifestyle between blue- and white-collar workers were not significant at the level of 0.05, except for some dimensions: blue-collar workers spend more time in the open air and sunlight and consume lunch as the main meal more regularly.

In general, lifestyle was not confirmed as statistically significant (at 0.05 level) moderator of perceived job stress, explaining just 11% of variance. However, there are some dimensions that are significantly (P<0.05) associated with occupational stress: employees that have regular bowel movements, sleep well and evaluate that they do not eat too much perceive their work as less stressful.

KEY WORDS

human resources management, railroad, occupational stress, blue-collar workers, white-collar workers, healthy lifestyle

1. INTRODUCTION

The term stress has different meanings. In the 1930s the physiological concept of stress was introduced by Hans Selye [1]. He defined stress as "the non-specific response of the body to any demand made upon it" [2], regardless of the subject's negative (distress) or positive/pleasant (eustress) perception of the specific demand [3]. The physiological concept of stress refers to the body reaction to a stimulus, while in physics and engineering the term stress means a force exerted, which in turn results in demand or load reaction, hence creating distortion [4]. The application of this approach to human behaviour led to the "stimulus model" of stress, by which stress is the demand placed on a person [5].

The term stress is used in contemporary everyday speech to describe "continuous feelings of worry about your work or personal life, that prevent you from relaxing" [6]. The closest to this view is the psychological concept of stress: a perceived imbalance between demands and resources, such that the individual cannot mobilise sufficient resources to meet the current demand [7, 8]. Similarly, occupational stress refers to (negative) "feelings that one experiences when the demands of the job exceed one's ability to cope" [9]. The terms occupational stress, work stress or job stress are used interchangeably [10]. During the last few decades several studies have documented that there is a significant relationship between occupational stress and employee illness [11, 12, 13, 14, 15] and that it causes injuries and accidents. The International Labour Organisation (ILO) estimated in the 1980s that job stress expenditures cost employers more than 200 billion USD a year [9]. A study by Foster Higgins & Company indicated that occupational stress refers to (negative) "feelings that one experiences when the demands of the job exceed one's ability to cope" [9]. The terms occupational stress, work stress or job stress are used interchangeably [10]. During the last few decades several studies have documented that there is a significant relationship between occupational stress and employee illness [11, 12, 13, 14, 15] and that it causes injuries and accidents. The International Labour Organisation (ILO) estimated in the 1980s that job stress expenditures cost employers more than 200 billion USD a year [9].

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costs of occupational stress amount to 0.5% to 3.5% of GNP [17].

Much of the research on occupational health and stress over the recent decades has concentrated on identifying jobs suspected of being “stress risk” [18]. Blue-collar transportation workers are one group that can be considered high risk because of high fatality rates within the industry [9]. According to the National Traumatic Occupational Fatalities Surveillance System (NTOF) the fatal injuries from 1980 to 1995 were highest for construction workers, followed by transportation workers [9]. Of the top ten occupations with fatal occupational injury rates at least 10 times the national average, four (water transportation, taxicab drivers, aircraft pilots and truck drivers) are in the transport industry [19]. Workers in transportation industries have been found to have more mental disorders, depression, and worse overall health than workers in other professional and managerial occupations [20, 21]. According to a few studies of occupational stress in the railroad industry, the railroad workers’ job belongs to occupations with elevated levels of stress [22]. In an expansive survey, Murphy [23] found that among jobs with high scores of stressors that are associated with cardiovascular disabilities were locomotive engineers and other transport occupations (air traffic controllers, truck drivers, airline pilots/attendants and bus drivers). The research by Barnes [24] showed that railroad personnel fall between roadway and aviation personnel in terms of their levels of stress experience and adjustment.

Work stress is closely related to work safety. Mild stress might enhance an individual’s performance while intensive acute stress and chronic stress diminish it. The symptoms of stress that increase the risk of work accidents are irritability, fatigue, headache, apathy, anxiety, dissatisfaction, depression, exhaustion, insomnia or sleepiness, exhaustion and more [25]. Such physiological and psychological effects of stress might have particularly negative effects in traffic, where the problem of safety is of extreme importance. Many studies have demonstrated the importance and complexity of safety problems in the traffic of pedestrians [26] in road traffic [27, 28, 29, 30, 31], rail [32, 33], maritime [34], and air traffic [35, 36], as well as other segments of transport systems.

“While a considerable body of research now exists on stress in professional and managerial occupations (…), there are substantially fewer studies of blue-collar workers. The popular belief of pressure of work, coronary heart disease, and many other stress-related illnesses is that they are found predominantly among white-collar groups; however, there is evidence to suggest that this is not true” [9]. It seems that a lower socio-economic position, which blue-collar workers indubitably hold, is a firm and stable source of stress. Most primates and mammals have hierarchical social structures and as a rule the individuals at lower social ranks have higher levels of stress hormones (glucocorticoids), a delayed recovery poststress and for the most part have more stress-related diseases [37, 38, 39]. The social position surely has a great impact on the chances of reproductive success, which is the key factor in evolution, and therefore animals react instinctively to its changes. The subjective interpretation of stressors perception is important as well [24]; however humans react to the socio-economic stressor (in part) subconsciously as well: “You may believe you don’t think much about status, but your endocrine system shows otherwise. Changes in status produce large changes in hormone levels” [40].

Beside general stress factors (stressors), like lower status position, that are common to all types of blue-collar workers, there are stressors that are specific for singular types of industries that might be even stronger sources of occupational stress [41]. However, as explained above, the physiological and perceived stress do not depend just on the intensity or duration of stressors, but also on resistance of organisms to stress. Even in the animal world there are factors (moderators) that ameliorate the stress of individuals with lower social rank – like social support in cooperatively breeding species [42, 43, 39]; factors such as different interpretation of the stressor, outlets for frustration, higher predictability, better control may also mitigate the stress [37].

There have been few studies of stress perception in railroad blue-collar workers. The pioneer research conducted by Barnes [24] on Indian railroad blue-collar workers showed that the level of perceived stress is high. The study of Diem [9] was focused on the effects of some stress moderators on stress perception (strain) of a special group of railroad workers – railroad yardmasters. “The railroad yardmaster and dispatcher confront many of the same stressors that air traffic controllers face. In general terms, the railroad yardmaster’s primary role is to ensure the safe and efficient configuration and movements of trains in the railyard…” [9]. Strain perception of 103 yardmasters of a large American railroad company was examined. The effects of three stress moderators have been studied: self-efficacy, internal locus of control and supervisor support. Only self-efficacy was shown to have statistically important moderating effects on strain perception.

According to Bandura [42], self efficacy reflects one’s belief that a given course of action can be carried out. Usually, it is understood that it can be fostered “through training, goal setting, rewards, on-the-job coaching, and the provision of adequate resources” [9]. However, work efficacy can be undermined by poor health and physical fitness of an individual worker who might perceive a work task as stressful despite good skills and knowledge, just because of their poor basic psycho-physical strength. The other constraint of such a conception of self-efficacy is that it encompasses the
effects of moderators that a person is aware of. However, better health and other factors might diminish the perceived job stress even without a worker believing in their effect.

The aim of this paper is to present the results of an empirical study of moderating effects of the healthiness of railroad employees’ lifestyle on their perception of job stress. In common words the term lifestyle usually refers to the way in which someone lives, including the kind of job they do [6]. In studying the relation between lifestyle and health the term is used in a narrower sense: it is “usually restricted to individual habits, such as smoking, diet, physical exercise or alcohol consumption” [44]. Even in this narrow meaning the notion of lifestyle is complex, multifaceted and difficult to define. There are, for instance, substantial differences in evaluation of the share of population that consume healthy and balanced diets just because of differences in definition as to what such a diet is. In the strict sense (a diet that conforms to official nutritional guidelines) less than 3% of the population of developed countries (data for USA) has a healthy and balanced diet [46], while research that is based on more tolerant definitions of a healthy diet or the self-perception of individuals of its healthiness evaluate that about half of the population (data for UK) consume a healthy diet [47]. Considering also the non-dietary elements of lifestyle the differences in evaluation of population that live a healthy lifestyle are even greater (from 3% to more than 80%; [47, 48]). However, despite the fact that empirical research has not detected a connection between lifestyle and health the term is used in a narrower sense: it is “usually restricted to individual habits, such as smoking, diet, physical exercise or alcohol consumption” [44]. Even in this narrow meaning the notion of lifestyle is complex, multifaceted and difficult to define. There are, for instance, substantial differences in evaluation of the share of population that consume healthy and balanced diets just because of differences in definition as to what such a diet is. In the strict sense (a diet that conforms to official nutritional guidelines) less than 3% of the population of developed countries (data for USA) has a healthy and balanced diet [46], while research that is based on more tolerant definitions of a healthy diet or the self-perception of individuals of its healthiness evaluate that about half of the population (data for UK) consume a healthy diet [47]. Considering also the non-dietary elements of lifestyle the differences in evaluation of population that live a healthy lifestyle are even greater (from 3% to more than 80%; [47, 48]). However, despite the fact that empirical research has not detected a connection between lifestyle and job stress [49] there are many studies that have confirmed it [50, 51, 52]. Empirical research has confirmed it also for some segments of employees in the transportation industry [53, 45].

In the increasing competition of an even more dynamic and globalized economy, companies and individual employees face many times limited possibilities to sensibly attenuate work stressors and their moderators that depend on the workers’ environment (social support, locus control…). Despite the fact that lifestyle depends on macroeconomic factors (like economic crises) as well [47], individuals have the opportunity to choose deliberately whether to live a more or less healthy lifestyle, which might mitigate job stress and enhance work performance [53]. The question that hasn’t been investigated yet and represents the topic of this paper, is how the job stress associated with healthiness of lifestyle in railroad blue- and white-collar workers is perceived.

2. HYPOTHESES

**Hypothesis 1**: Perceived occupational stress in railroad blue-collar workers is higher than in railroad white-collar workers.

**Hypothesis 2**: Railroad blue-collar workers differ significantly from white-collar workers in many dimensions of a healthy lifestyle.

**Hypothesis 3**: Perceived occupational stress is significantly associated with different elements of a healthy lifestyle.

3. METHODS

3.1 Questionnaire and measures

For this research a special (unique, 6 pages long) anonymous questionnaire was developed. It was divided into 7 sections (I Demographic data, II General state of health and satisfaction, III Physical factors of health, IV Nutrition, V Other factors of health, VI Valuation of proper lifestyle, VII Improvement of lifestyle and nutritional habits).

It was not the aim of this research to explore all dimensions of perceived job stress. Thus the only question on the general level of perceived occupational stress was just one of the indices of the general state of health and satisfaction (section II). It was measured on a 4-point ordinal scale. On the contrary, the aim of the research was to explore elements of a healthy lifestyle. No measure of a general level of lifestyle healthiness was used. The measures of its 26 dimensions are presented in the next section.

3.2 Sample and data collection

Data were collected in a large railway company with its seat in Ljubljana. The sample was stratified. Through the help of the personnel office of the company the questionnaires were distributed to employees, chosen randomly from the lists of personnel. Each selected candidate received with the questionnaire a stamped envelope with the address of the research institute. The collection of data took place in 2008. There were 245 valid answers received. The sample presents 11% of employees of the local organisational unit.

3.3 Statistical analysis

For statistical analyses the statistical program SPSS Ver.16 was used. First, the variables were edited, coded and explored. Frequency tables, basic statistics, data distribution and correlation coefficients among a subset of indicators as a measure for data validity were used. When necessary, we limited the number of variables for a subset of indices. The linear data reduction, namely factor analysis, was used. We opted for the principal axis factoring algorithm. In the last stage the research hypotheses were tested by using bivariate (t-test) or multivariate (linear regression) statistical analysis.
4. RESULTS

4.1 Demographic data

Most of the (245) employees included in the sample were males (87.8%). The average age was 40.6 years (ranging from 21 to 62 years). With the automation of work there is no longer a clear-cut border between white- and blue-collar workers [22]; however, 168 employees (68.6%) declared that they do mostly “physical” or “field work”; and we will consider them blue-collar workers. The group of white-collar workers – employees who declared that they do mostly clerical work - counted 77 members. Most (26) of 30 managers included in the sample declared that they perform mostly clerical work. The typical educational level of blue-collar workers was 12 years of education (64.3%), whilst among the white-collar workers the most numerous were employees with 14 or more years of education (46.8%).

4.2 Work stress perception of blue- and white-collar workers

Most of the employees (54.3%) included in the sample perceived their work as stressful (43.3%) or very stressful (11.0%). 52.4% of blue-collar workers perceived their work as stressful (42.3%) or very stressful (10.1%). In the group of white-collar workers the perception of work stress was even higher (58%; 13% as very stressful). The difference between the groups was not statistically significant at the 0.05 level. Thus, Hypothesis 1 was not confirmed by the results.

4.3 Healthy lifestyle elements of blue- and white-collar workers

The study did not provide measures of the overall healthiness of employees’ lifestyles. However, considering that being overweight or obese are today critical health risk factors [54, 55, 56] Body Mass Index (BMI) might be considered an important indicator of lifestyle healthiness. It depends, namely, on two important elements of healthy lifestyle: food energy intake and exercise. The average BMI of the sample was 27.1, which is above the upper limit of the normal range (18.5-24.9). No statistically significant differences at the 0.05 level between the BMI of blue-collar workers (27.4) and white-collar workers (26.5) were found.

Similarly, the analyses of singular elements of a healthy lifestyle showed little difference in lifestyle between blue- and white-collar workers. Among 25 dimensions (beside BMI) of lifestyle healthiness only 3 were found to differ significantly at the 0.05 level, as is explained in detail in the following subsections. Thus the hypothesis on substantial differences in lifestyle between blue- and white-collar workers was not confirmed.

4.3.1 Nutritional elements of healthy lifestyle

Nutritional elements of lifestyle were measured using 18 dimensions. Below the specific questions and possible answers (in parentheses) are synthesised:
- number of meals per day (1, 2, 3, 4, 5, 6 or more),
- the main meal (breakfast, lunch, dinner, dinner and lunch together, other),
- going to sleep on a full stomach (every day/often, sometimes, seldom, never),
- type of nutrition (mixed, vegetarian, vegan, raw-food diet, other),
- meat, meat products and fish consumption (every day in more meals, every day in one meal, more times per week, once a week or more seldom, never),
- frequency of raw fruit and vegetables consumption per day (5 or more times, 2-4 times, once per day, several times per week, seldom/never),
- frequency of fresh juice consumption (every day, several times per week, sometimes, seldom/never),
- diet variety (varied, steady),
- perception of usual ingested food sufficiency (eat too much, right quantity, too little),
- sweets consumption (every day, several times per week, once per week, sometimes/seldom, never),
- slimming diets, cleansing diets with raw food, fasting (frequently once a month or more often, sometimes, seldom/never),
- food supplements consumption (every day, every week –at least once, sometimes/seldom, never),
- coffee, alcohol, smoking (every day, every week, sometimes/seldom, never).

The WHO and national authorities [57] along with the program CINDI [58] have formulated guidelines for healthy nutrition. Variables in Table 1 (presented in a dichotomised form) show that most railroad workers do not consume the recommended 5 meals per day, and do not consume fruit and vegetables at least 5 times per day; many (about 45%) do not limit enough the consumption of refined carbohydrates like sweets; 29% smoke every day. Nearly ⅓ consume coffee daily. Despite the fact that the majority are overweight or obese, only about 28% are aware of eating too much.

Results show that there were no significant differences at level 0.05 in nutritional lifestyle between blue- and white-collar workers, except for fasting (white-collar workers do so more often) and marginally (P=0.052) in consuming lunch as the main meal (in blue-collar workers it is marginally more usual than in white-collar workers).
4.3.2 Non-nutritional elements of healthy lifestyle

Non-nutritional elements of lifestyle were measured with 7 dimensions. Below the specific questions and possible answers (in parentheses) are synthesised:

- time spent daily for exercising (intensive walking, running, gardening…), staying outside in sunlight and staying in fresh air (minutes per day),
- rest or relaxation in the middle of the day (every day/often, sometimes, seldom/never),
- usual bowel movements per day (more than 3 times, 2-3 times, once, not every day),
- sleep quality (good, poor).

Despite most national classifications including drinking water among foods we decided to consider drinking of water as a non-nutritional element, because most people and many anti-stress methods do not conceive drinking of water as nutrition. In Table 2 results are presented for each of these dimensions. We presented frequencies for values that according to some sources might be considered as minimal standards for a healthy lifestyle: one hour of walking per day [59] one hour of 1,000 lux of light [60], one hour of fresh air, 1-3 bowel movements per day, midday rest, having good sleep [61].

Table 1 - Nutritional elements of healthy lifestyle in railroad employees

<table>
<thead>
<tr>
<th></th>
<th>All employees (N=245)</th>
<th>White-collar (N=77)</th>
<th>Blue-collar (N=168)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 or more meals per day</td>
<td>5.4</td>
<td>6.5</td>
<td>5.8</td>
<td>0.576</td>
</tr>
<tr>
<td>The main meal is lunch</td>
<td>74.7</td>
<td>66.2</td>
<td>78.6</td>
<td>0.052</td>
</tr>
<tr>
<td>Going to sleep on full stomach (every day or often)</td>
<td>7.3</td>
<td>9.1</td>
<td>6.5</td>
<td>0.481</td>
</tr>
<tr>
<td>Mixed diet</td>
<td>98.8</td>
<td>96.1</td>
<td>100.0</td>
<td>0.083</td>
</tr>
<tr>
<td>Eating meat or fish every day</td>
<td>41.8</td>
<td>36.8</td>
<td>44.0</td>
<td>0.289</td>
</tr>
<tr>
<td>Eating raw fruits and vegetables at least 2 times per day</td>
<td>27.0</td>
<td>31.2</td>
<td>25.0</td>
<td>0.314</td>
</tr>
<tr>
<td>Raw food constitutes the greatest part of consumed food</td>
<td>14.7</td>
<td>13.0</td>
<td>15.5</td>
<td>0.611</td>
</tr>
<tr>
<td>Fresh juices consumed at least some times per week</td>
<td>24.5</td>
<td>18.2</td>
<td>27.4</td>
<td>0.103</td>
</tr>
<tr>
<td>Consider eating a varied diet</td>
<td>81.2</td>
<td>81.8</td>
<td>81.0</td>
<td>0.873</td>
</tr>
<tr>
<td>Consider eating too much</td>
<td>28.2</td>
<td>28.6</td>
<td>28.0</td>
<td>0.924</td>
</tr>
<tr>
<td>Eating sweets at least several times per week</td>
<td>44.9</td>
<td>39.0</td>
<td>47.6</td>
<td>0.205</td>
</tr>
<tr>
<td>Slimming diets (never)</td>
<td>64.1</td>
<td>62.3</td>
<td>64.9</td>
<td>0.702</td>
</tr>
<tr>
<td>Cleansing diets with raw fruits and vegetables (never)</td>
<td>70.8</td>
<td>72.4</td>
<td>70.1</td>
<td>0.715</td>
</tr>
<tr>
<td>Fasting (never)</td>
<td>79.4</td>
<td>86.8</td>
<td>76.0</td>
<td>0.036*</td>
</tr>
<tr>
<td>Consuming food supplements at least once per week</td>
<td>21.2</td>
<td>18.7</td>
<td>22.3</td>
<td>0.526</td>
</tr>
<tr>
<td>Drinking coffee every day</td>
<td>73.1</td>
<td>77.9</td>
<td>70.8</td>
<td>0.233</td>
</tr>
<tr>
<td>Drinking alcohol every day</td>
<td>4.9</td>
<td>6.5</td>
<td>4.2</td>
<td>0.435</td>
</tr>
<tr>
<td>Smoking every day</td>
<td>29.0</td>
<td>28.6</td>
<td>29.2</td>
<td>0.924</td>
</tr>
</tbody>
</table>

Note: * significant differences between white- and blue-collar workers at the 0.05 level

Table 2 - Non-nutritional elements of healthy lifestyle

<table>
<thead>
<tr>
<th></th>
<th>All employees (N=245)</th>
<th>White-collar (N=77)</th>
<th>Blue-collar (N=168)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising (intensive walking, running, gardening…) at least 1 hour per day</td>
<td>58.0</td>
<td>53.3</td>
<td>61.1</td>
<td>0.324</td>
</tr>
<tr>
<td>Being in fresh air at least 1 hour per day</td>
<td>85.2</td>
<td>73.3</td>
<td>90.5</td>
<td>0.003*</td>
</tr>
<tr>
<td>Being in sunlight (not in the car) at least 1 hour per day</td>
<td>82.6</td>
<td>74.3</td>
<td>86.3</td>
<td>0.040*</td>
</tr>
<tr>
<td>Rest or relaxation in the middle of the day (every day or often)</td>
<td>12.2</td>
<td>18.2</td>
<td>9.5</td>
<td>0.084</td>
</tr>
<tr>
<td>Emptying of the bowels (1-3 times per day)</td>
<td>92.6</td>
<td>93.5</td>
<td>92.3</td>
<td>0.730</td>
</tr>
<tr>
<td>Having good sleep</td>
<td>80.3</td>
<td>79.2</td>
<td>80.8</td>
<td>0.769</td>
</tr>
<tr>
<td>Drinking of water or fresh juices (not tea or other drinks) at least 1.5 litres per day</td>
<td>18.8</td>
<td>16.9</td>
<td>19.7</td>
<td>0.609</td>
</tr>
</tbody>
</table>

Note: * significant differences between white- and blue-collar workers at the 0.05 level
Results show that there were no significant differences at level 0.05 in lifestyle healthiness between blue- and white-collar workers, except for staying in fresh air and sunlight at least for 1 hour per day: blue-collar workers do so significantly more often than white-collar workers (P<0.05).

4.4 Statistical association of work stress perception and lifestyle constituents

The regression analyses of the impact of lifestyle elements on perceived occupational stress was based on original (not dichotomised) values of 26 variables concerning lifestyle (nutritional, non-nutritional and BMI). The partial models of regression based on 18 nutritional variables and 7 non-nutritional as independent variables did not show much different results as the overall model. Its results are included in Table 3.

The overall regression model thus included BMI, nutritional and non-nutritional elements as independent variables and the level of perceived stress as a dependent variable. Results show that the regression model is not statistically significant at the 0.05 level, explaining 11.3 % of total variance. Three lifestyle elements emerged as significant (at 0.05 level) factors of occupational stress:

- Those railroad workers that empty their bowels more often are less under stress than those who empty their bowels less often, or experience constipation.
- Those railroad workers who consider that they eat too much are more stressed than others.
- There was another regression coefficient being statistically significant at the 0.05 level that was not present in separated analysis of impact of nutritional and non-nutritional elements of job stress: Those railroad workers who have good sleep are

<table>
<thead>
<tr>
<th>Table 3 - Regression coefficients for the impact of lifestyle elements (nutritional, non-nutritional and BMI) on perceived job stress of railroad employees</th>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>Number of daily meals</td>
</tr>
<tr>
<td>The main meal is lunch</td>
</tr>
<tr>
<td>Going to sleep on a full stomach</td>
</tr>
<tr>
<td>Frequency of eating meat or fish</td>
</tr>
<tr>
<td>Frequency of eating raw fruits and vegetables</td>
</tr>
<tr>
<td>Share of raw food</td>
</tr>
<tr>
<td>Frequency of fresh juice consumption</td>
</tr>
<tr>
<td>Consider eating a varied diet</td>
</tr>
<tr>
<td>Consider eating too much</td>
</tr>
<tr>
<td>Eating sweets frequency</td>
</tr>
<tr>
<td>Slimming diets frequency</td>
</tr>
<tr>
<td>Cleansing diets with raw fruits and vegetables (frequency)</td>
</tr>
<tr>
<td>Consuming food supplements (frequency)</td>
</tr>
<tr>
<td>Drinking coffee (frequency)</td>
</tr>
<tr>
<td>Drinking alcohol (frequency)</td>
</tr>
<tr>
<td>Smoking (frequency)</td>
</tr>
<tr>
<td>BMI – Body Mass Index</td>
</tr>
<tr>
<td>Drinking of water or fresh juices (not other drinks) – quantity</td>
</tr>
<tr>
<td>Exercising (intensive walking, running, gardening...) (duration)</td>
</tr>
<tr>
<td>Being in fresh air (duration)</td>
</tr>
<tr>
<td>Being in sunlight (not in the car) (duration)</td>
</tr>
<tr>
<td>Rest or relaxation in the middle of the day</td>
</tr>
<tr>
<td>Emptying of the bowels (frequency)</td>
</tr>
<tr>
<td>Having good sleep</td>
</tr>
</tbody>
</table>

Note: * regression coefficient is statistically significant at the 0.05 level.
less under stress than those who reported having poor sleep.

Despite the influence of these elements of lifestyle on perceived job stress, the statistical analyses did not confirm Hypothesis 3.

5. DISCUSSION

There are at least two questions that emerge from the presented research results:

a) Why didn’t the level of occupational stress perceived by railroad blue-collar workers exceed the level of white-collar workers, as we hypothesized?

The group that perceived the highest level of work stress were managers (60.0%). They are the group with the highest socio-economic status in the work organisation. As explained in the introductory section, they usually have lower level of stress than their subordinates. However, even among animals that live in hierarchical social structures, the individuals with upper social ranks have higher levels of stress hormones when the ranks are not stable [37, 38, 39]. During the last two decades the top management of the Slovene railroad company has experienced much public criticism and changes of personnel at high managerial levels; the managers’ high stress perception might derive from this instability. Another reason could be the relatively safe position of blue-collar workers. In the Slovene railroad company the state ownership still prevails and the industry’s labour union is quite influential. Thus, the company downsizing, typical in all industrial branches, has occurred in railroads in the lower degree. Maybe the social solidarity that is known as stress moderator mitigates the level of perceived stress in the group of Slovene railroad blue-collar workers. However, the reason for small differences in levels of perceived work stress between the two working groups could be more general: in the contemporary industry “the gap between the white- and blue-collar work may be narrowing” [22]. Thus since 1980s some scientists have claimed that “a division into blue and white-collar groupings is no longer a meaningful exercise” [62], while others state that such a division is nevertheless reasonable [63]. Further research of the problem is needed.

b) Is the influence of a healthy lifestyle on the job stress and wellbeing perception in railroad workers (really) of marginal importance?

Any research based on the opinion questionnaires must face inherent constraints: because of conscious or unconscious reasons the answers may not reflect the true reality. Furthermore, in this study the perception of job stress was measured by just one question. Further research is needed for a more detailed insight into the relationship between occupational stress and elements of healthy lifestyle in railroad workers.

This paper focussed only on the relation of lifestyle and job stress. However, a healthy lifestyle might affect the work through other mechanisms: it might increase the general level of health and psycho-physical fitness, increasing performance and diminishing risks of accidents... These views have not been explored regarding railroad workers yet.

6. CONCLUSIONS

Most of the interviewed railroad employees perceive their work as stressful or very stressful. The lifestyle of the majority is mainly unhealthy. No significant difference was found in these traits between blue- and white-collar workers.

In general, the lifestyle healthiness was not found to be a significant moderator of the perceived job stress. However, some dimensions of healthy lifestyle have been confirmed as significant moderators of perceived job stress: constipation and poor sleep are such factors. This might show that release of the body from metabolic and digestive wastes might be important. Further research is needed to confirm this.

Nutritional factors were not found to be significant moderators of stress; an exception was the belief of eating too much as a factor that increases the level of perceived work stress. Considering that BMI was not associated with occupational stress perception it would be necessary to inquire whether just the belief of eating too much (not the real practice) is the source of stress.

Other research has shown that healthy lifestyle affects the work through many mechanisms, not just through work stress perception. Thus, further study is needed to determine the importance of a healthy lifestyle as a factor of work and wellbeing of railroad employees.

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POVZETEK

ZAZNAVÁ STRESA PRI DELU IN ZDRAV NAČIN ŽIVLJENJA ŽELEZNIČARSKIH DELAVČEV

Leta 2008 je bila opravljena anketa na reprezentativnem stratificiranem vzorcu 245 zaposlenih na Slovenskih železnicah (168 fizičnih in 77 umskih delavcev). Njen cilj je bil raziskati različne razsežnosti zdravosti načina življenja...
delavcev. V ta namen je bil oblikovan poseben vprašalnik.

Intenzivnost zaznanega stresa pri delu je bila merjena z enim splošnim kazalcem, temelječim na 4 stopniški ordinarni lestvici. 54.3% zaposlenih je ocenilo svoje delo kot stresno ali zelo stresno. Razlike med fizičnimi in umskimi delavci niso bile statistično pomembne.

V raziskavi je bilo analiziranih 26 dimenzij življenjskega sloga. 66.9% anketiranih je imelo previsoko telesno težo (BMI 25 ali več). Razlike v življenjskem slogu fizičnih in umskih delavcev niso bile statistično pomembne na ravni 0.05, ražen za nekatere dimenzije: fizični delavci preživijo več časa na zraku in sončni svetlobi in užijo kosilo kot glavni oblog bolj redno.

V splošnem se življenjski slog ni pokazal kot statistično pomemben (na ravni 0.05) moderator zaznanega stresa pri delu; pojasnil je le 11% variacije. Vendar obstajajo razsežnosti življenjskega sloga, ki so statistično značilno (P<0.05) povezane s stresom pri delu: zaposleni, ki redno izločajo blato, dobro spijo in ocenjujejo, da ne jedo preveč, zaznajavejo svoje delo kot manj stresno.

**KLJUČNE BESEDE**

management človeških virov, železnice, stres pri delu, fizični delavci, umski delavci, zdrav način življenja

**LITERATURE**


[38] Sapolsky, Robert M.: Social status and health in humans and other animals, Annual review of anthropology, No. 33, 2004, pp. 393-418


