Вищий навчальний заклад «Український католицький університет»
Факультет наук про здоров'я
Кафедра психології та психотерапії

Магістерська робота

на тему

ХАРАКТЕРИСТИКИ СНУ ЯК ПРЕДИКТОРИ ВИГОРАННЯ ОСІБ, ЯКІ ПРАЦЮЮТЬ

Виконала:
студентка 6 курсу, групи ЗПП18-М
спеціальності 053 Психологія
освітньої програми «Клінічна психологія з основами психодинамічної терапії»
Яремко С.А.
Керівник доц. Кривенко І. С.
Рецензент доц. Сеник О. М.

Львів – 2020

Yaremko S. A. Sleep characteristics as predictors for burnout of employees: Master thesis: (053 – «Psychology») / The Ukrainian Catholic University. Clinical Psychology Department; supervisor: I. Kryvenko, Candidate of Psychological Sciences. – Lviv, 2020. – 116 p.

Annotation: This thesis represents the research of sleep characteristics and its possibility to be predictors of burnout of employees. The critical analysis based on the literature processing provided us with an opportunity to create a theoretical model of linkages between sleep characteristics and burnout among employees.

The empirical study demonstrated that employees' sleep characteristics differ much depending on their burnout level. Those with the expressed burnout symptoms feel exhausted after waiting up and evaluate their sleep as bad. These employees also have comparably lower levels of job satisfaction.

The strongest empirical model of predictability for burnout includes sleep characteristics, job characteristics and personality traits. If all three factors are considered, almost 2/3 of burnout variance can be anticipated. Moreover, sleep characteristics itself give a 28% predictability, which is, however, less than work characteristics, but basically job satisfaction, may give. The findings delineate that burnout can be predicted with some particular sleep characterizes along with job characteristics and personality traits. These results can be fruitfully used in human resource and organizational psychology fields for burnout prediction and prevention.

Key words: sleep characteristics, job characteristics, personality traits, burnout.

CONTENT

Introduction……4

CHAPTER I. BURNOUT AND SLEEP: ARE THERE ANY INTERCONNECTIONS?

1.1. Burnout as an occupational phenomenon: the overview of the concept transformation in psychology …….....7

1.2. Symptoms and factors of burnout ……18

1.3. Main characteristics of sleep. Sleep and burnout…….…….32

1.4. Theoretical model of research: sleep-burnout connections ……..42

Conclusions to the chapter I…….....45

CHAPTER II. ORGANIZATION AND RESULTS OF STUDYING THE INFLUENCE OF SLEEP CHARACTERISTICS ON THE BURNOUT OF EMPLOYEES

2.1. Characteristics of the study group,,,,,…...……..47

2.2. Characteristics of the research methods……..……...50

2.3. Results of the research regarding the sleep as a predictor of burnout…….54

2.3.1. Work and personality features of people with different burnout levels…….55

2.3.2. Sleep, work or personality factors – which are stronger predictors for burnout?.....60

2.3.3. The prediction model of all factors – sleep, work peculiarities, and personality traits……..69

Conclusions to the chapter II…….....73

Chapter 3. DISCUSSION: SLEEP AS A BURNOUT PREDICTOR

3.1. Burnout prediction: why does sleep matter?…….……...….75

3.2. Recommendations: what to do with sleep-burnout relations?…….....87

Conclusions to chapter III……90

Conclusions……..92

References……95

Appendixes…….107

Introduction

Burnout can be characterized as a type of psychological defence from the particular traumatic influence which causes an emotional disabling of a personality. It also develops based on chronic stress and negative emotions which are usually related to a job, professional activity, social and working environment. Most people who suffer from burnout have a feeling that their efforts are not recognized and not efficient. There are investigated a range of symptoms of burnout by C. Maschlach (1976), H. Freundenberger (1974) etc.

Nowadays society requirement regarding job efficiency, personal productivity and result-oriented task accomplishment are rapidly growing. That is why it is an issue of great importance being able to predict burnout on the early stages and provide employees with important support. Sleep problems always were indicators of some problems related to difficulties in everyday life. Those complications can be related to job, stressful circumstances and some personality peculiarities.

Unfortunately, there are not enough theoretical and practical research regarding the possibility of sleep characteristics to be among the burnout predictors. That is why it was decided in these academic papers to analyze the possibility of some particular sleep characteristic to be able to predict burnout among the employees.

It was suggested in these papers that sleep characteristics along with job characteristics and the influence of personality traits can be predictors of burnout among those people who are engaged in the working activity. These results are deepening the basic knowledge about this subject. It is also possible to come up with the practical recommendations which are prepared exclusively for the employees who are dealing with a burnout phenomenon. It is also can be useful for people from human resource management which keep trying to find a major focus on the way of understanding those employees who are demonstrating the first symptoms of burnout.

Object of research: sleep characteristics as predictors of burnout.

Subject of research: burnout as a complex emotional, cognitive, physiological and behavioral phenomenon.

The objective of research: to identify possible predictors of the employees' burnout and find out the role of sleep characteristics among them**.**

Hypotheses:

1. Probably, the employees who score high for subclinical burnout, differ by their sleep characteristics from those who have no sighs for being burned-out at work.

2. Sleep characteristics are good predictors for burnout, probably, stronger ones in the prediction model of burnout, comparing to work peculiarities.

3. The best prediction model should include all factors – sleep, work peculiarities, and personality traits.

Research objectives:

1. To analyze scientific approaches to defining burnout, to identify the probable predictors of it; to argue sleep characteristics to be predictors for burnout of employees.

2. To select the most appropriate diagnostic instruments on the determination of the level of burnout, sleep characteristics and personality traits meaningful for burnout prediction.

3. To empirically check prediction models for burnout, including job characteristics, sleep peculiarities and personality traits for choosing the most powerful of them.

4. To create practical recommendations for HR managers, organizational psychologists, mental health officers etc. for early identification and prevention of employees' burnout through sleep and personality studying.

Research group: there were 108 adults (19-56 years old) research participants, mostly women (73%), who took part in the online poll.

The following questionnaires and inventories as empirical research methods were used: The self-assessed burnout inventory by V. Dudiak (according to which, participants could be divided as those having high (31 person), medium (44) and low (33) levels of burnout); Job Satisfaction Questionnaire by P. E. Spector, The Big Five Locator by P. Costa and R. McCrae, modified author's version of The Pittsburgh Sleep Quality Index.

Statistical methods of results processing used in the research are linear regression, cluster and comparative analysis

Scientific novelty of the obtained results:

1. Sleep characteristics which can predict burnout among employees were distinguished. 2. The general model of burnout predictors based on sleep characteristics, job characteristics and personality traits, was created. 3. Recommendations for the human resource management based on the sleep characteristics forecasts of burnout were prepared.

The practical significance of the obtained results: the obtained results can be used during the interview with employees for identification of burnout symptoms.

Structure and scope of work. This academic papers consists of the introduction, 3 chapters and the list of literature (70 titles) and appendixes (9 pages). There are used 19 tables, 13 figures. The overall scope – 116 pages, the main content includes 94 pages.

CHAPTER I

BURNOUT AND SLEEP: ARE THERE ANY INTERCONNECTIONS?

1.1. Burnout as an occupational phenomenon: the overview of the concept transformation in psychology

The modern definition of burnout (in different concepts named also as burnout (Freudenberger, 1974; Maslach, 1976, as cited in Udovik at al., 2018), job or professional burnout (Bril, 1984; M. Burisch, 1989, as cited in Chutko & Kozina, 2013), occupational burnout (Ofei-Dodoo et al., 2019, as cited in Lu et al., 2020), emotional burnout (Boyko, 1996; Malyar-Gazda, 2015) has gone through various of transformations through the years of studying this phenomenon at first and to be granted with the opportunity to be included as a syndrome into the latest 11th Revision of the ICD-11afterwards. It is stated on the website of the World Health Organization dated from May 28, 2019, that burnout was incorporated into the ICD-11 as an "occupation phenomenon" (WHO, 2019) with the lack of being classified as the medical condition yet. The official definition, with reference to the WHO, of the burnout is written in chapter 24 of ICD-11 among the part regarding the “Problems associated with employment or unemployment” in the paragraph of QD-85 Burnout (ICD-11 for Mortality and Morbidity Statistics, 2019) and described as following:

“Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: 1) feelings of energy depletion or exhaustion; 2) increased mental distance from one’s job, or feelings of negativism or cynicism related to one's job; and 3) reduced professional efficacy. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life” (ICD-11 for Mortality and Morbidity Statistics, 2019) which is much more detailed in comparison to the previous

ICD-10 description of this term where it was placed under the code Z73 - “Problems related to life management difficulty” with the only a general description "state of vital exhaustion" which was not related to the job (ICD-10-CM Codes, 2020).

According to the main definition of the World Health Organization, "burnout syndrome" is physical, emotional or motivational exhaustion characterized by impaired productivity in work, fatigue, insomnia, increased exposure to somatic diseases but modern researchers have emphasized that burnout may be associated with the progression of chronic fatigue syndrome as well (Chutko & Kozina, 2013, p. 10).

It worth to mention that the phenomenon of burnout is dated back to the early 70 years of last century. In 1974 there was a rapid increase in the complaints among the employees of the social and psychological support services who were responsible for the maintaining of the working relationships and alleviate the severe psychological well-being of those in need. (Freudenberger, 1983, as cited in Udovik at al., 2018). It was to be expected that the economic losses were inevitable in this case and the principal reason was described as the specific form of stress or the decease of communication with the subsequent change to the staff burned-out and personality burn-out with the passage of time (Udovik at al., 2018).

The term “burnout” was submitted for the first time into the scientific field by the G. Bradley in his research regarding the civil servants which were guarded of probation service (Hryzuk, 2012). Moreover, the first serious study regarding the related subject was conducted by the H. Freudenberger (1974) who pioneered in the introduction of the term “burn-out” for the characteristics of healthy peoples’ psychological state. That type of people was vigorously engaged into the close communicational process with clients due to their professional duties which made them feel the emotionally overburden atmosphere (Hryzuk, 2012; Udovik at al., 2018).

When it comes to the more detailed description of the problem of burnout, it was addressed by the C. Maslach in her study “Burned-out” (1976, as cited in Udovik at al.,

2018) who offered a new term “burnout” which was transformed into a process and described a state of depletion and exhaustion associated with a feeling of personal worthlessness. C. Maslach compared to H. Freudenberg delineated that burnout was mainly a disruption of the so-called balance in the professional and personal life of employees when other researchers from the Western countries noticed a strong correlation between professional burnout and the termination of employment. The implication is that employees who feel the chronic emotional exhaustion try to manage the situation with the help of physical (reduction of working time, activity avoidance, professional communication etc.) and psychological distance from others (Chutko & Kozina, 2013).

In 1976 she published the first article regarding the above-mentioned topic and pointed out the employees of a medical sphere as those who were under the risk of emotional burn-out and after 10 years according to her book that list was replenished with new occupations as teachers, policemen etc. (Udovik at al., 2018).

In the 80s, according to R. Gillespie (1981, as cited in Udovik at al., 2018), the concept of burning out and the major definition "burnout" even displaced the term stress for the major headlines.

C. Cherniss (1980) has defined burnout syndrome as a major loss of motivation to work in response to excessive commitments, dissatisfaction with psychological care and emotional exhaustion of employees.

In this process, he identified 3 major stages (Cherniss, 1980):

- the first stage is related to the imbalance between resources and requirements (stress);
- the second stage is responsible for the immediate, short-term emotional stress, fatigue and exhaustion;
- the third stage mostly consists of a number of changes in attitudes and behaviour, such as mechanical (emotionally unrelated) customer treatment.

In the framework of his approach, C. Cherniss (1992, as cited in Chutko & Kozina, 2013, p. 16) introduced a new element of burnout – an individual way of overcoming stress. It is considered that in case of using an adequate way to overcome a stressful situation the likelihood of burnout occurrence is becoming much lower and as opposed to the first statement, the inadequate way of dealing with stress leads to burnout. He also described burnout as the development of employees' alienation as the response on the stress influence (Chutko & Kozina, 2013).

In 1982 the phenomenon of burnout was explained by C. Maslach in cooperation of B. Pelman and E. Hartman in details, creating a three-factor model. According to it, there are three groups of symptoms for burnout (Udovik at al., 2018):

1. Emotional exhaustion – the feeling of inner emptiness and a decrease in emotional tone due to overstrain and exhaustion of person's emotional resources. There is also a loss of interest in both professional activities and interpersonal communication and lack of work with "inspiration".

2. Depersonalization – the indifferent and even often negative attitude towards people because of their professional activity. Interaction with those people become more and more formal, impersonal and even superficial. Also, empathy and involvement in the client's problems are mostly dulled or sometimes disappears, when an internal irritation without a reason appears. Most of the time such type of irritation is restrained by a specialist which eventually leads to break out and to conflicts ultimately. The behavioural level is characterized by the cynicism, sarcasm, labelling and the appearance of professional slang, which can be regarded by colleagues as a manifestation of arrogance. And typical for the closed work environment where employees carry out joint activities for up to six months.

3. Reduction of professional achievements – the reduced work productivity of employees is embodied in a decrease in motivation for activity and, consequently,

unsatisfactory results that are negatively and excessively assessed that results in negativity and reduced self-esteem as well.

After the careful consideration of the present model, Japanese researchers such as H. Kurasune et al. (1994, as cited in Udovik at al., 2018), offered to add the 4th-factor "Involvement" which was mainly characterized by the headache, sleep disturbance and irritability along with chemical addictions (smoking, alcohol etc.). The first part of this last factor will be carefully considered by further research in this work.

To sum up and create a linkage between those 3 components it is important to establish a link between the main subject and the roots of its genesis. Thus, depersonalization correlates with the occurrence of indifferent, negative and even cynical attitude towards people with whom employees are obliged to interact because of their work and it leads to excessive contact formalization and impersonalization. Mostly negative attitudes of employees towards clients manifest themselves in internally restrained irritation which tends to transform into a conflict. Depersonalization can be considered as a feeling of losing one's Self and the excruciating experience of lack of emotional engagement in relationships to work and sometimes loved ones.

On the contrary, the reduced work productivity which can be described as the vast reduction of personal achievements is beginning to emerge in a decrease of the personal competence assessment, dissatisfaction with oneself, a decrease in the professional activity value, a negative attitude towards oneself as a person, and disregard to work (Chutko & Kozina, 2013).

According to D. Harrison (1983, as cited in Chutko & Kozina, 2013, p. 16), burnout can be considered as a phenomenon which is related to the individual's perception of one's social competence and effectiveness in interpersonal relationships with the others.

Another model of burnout is a single factor model of A. Pines and E. Aronson (1989, as cited in Chutko & Kozina, 2013), who viewed exhaustion as the main cause of

burnout as the state of physical and mental exhaustion caused by a prolonged stay in situations of emotional overload.

A. Shirom (1989, as cited in Chutko & Kozina, 2013) considered burnout to be a combination of physical, emotional and cognitive exhaustion or fatigue, with emotional exhaustion as the main factor.

Another important concept of M. Burisch (1989, as cited in Chutko & Kozina, 2013) who claimed that the professional burnout syndrome is a wide range of symptoms regarding the prolonged work stress and certain types of occupational crisis.

D. Dierendonck, V. Schaufeli, Ch. Sixma (1994, as cited in Chutko & Kozina, 2013) have found that burnout involves emotional exhaustion and depersonalization as two main factors. This information allowed them to construct the two-factor model regarding the burnout. In the first component (affective) they included allegations about health, physical well-being, nervous tension, and emotional exhaustion and in the second, which is called depersonalization, they affirmed that it manifests in the change of attitudes either to patients or to oneself (Chutko & Kozina, 2013).

E. Maher (1983) and K. Kondo (1991, as cited in Udovik at al., 2018) proposed another type of two-factor model where the syndrome of burnout was described as the form of maladaptation to the working place because of the excessive workload and the distortion of interpersonal relations. Emotionally stressful and debilitating work accompanied by an excessive waste of mental energy often leads to psychosomatic fatigue (exhaustion) and emotional exhaustion (exhaustion) and in this state of health employees can end up having the sleep distortion as well (Chutko & Kozina, 2013).

P. Brill believes that burnout occurs mainly because of a mismatch between expectations, emotional demands made by work and expectations, emotional requirements of the person. So, it consists of dysphoric symptoms, including emotional exhaustion and occurs in previously adequately functioning individuals who are not having symptoms of psychopathology (Brill, 1984).

R. Greenberg in his research offered to distinguish the burnout in the process of five stages (Greenberg, 1981, as cited in Chutko & Kozina, 2013):

The first stage: "honeymoon" – where the employee refers to the work and tasks with enthusiasm but it passes quickly and employee's frustration increases with stress on the job place.

The second stage: "lack of fuel" – adds to physiological symptoms the psycho-emotional symptoms as well. Furthermore, on this stage, difficulties with falling asleep and waking up may occur, therefore, a person does not get enough sleep and his or her emotional state has a feature of fatigue and apathy. The total number of physical strength decreases, and the employee tends to work less without additional stimulation from the management.

The third stage: consists of chronic symptoms such as overwork sleep disturbance and stress which reduce immunity. On this stage, people are more susceptible to different types of disease. From the affective side, there is anger and irritability along with a feeling of depression.

The fourth stage: crisis. The employee is almost unable to work due to chronic diseases which may develop in an insignificant number. This lead to increase the number of days off per year. Many people keep trying to continue their work even in a painful condition, which worsens their health and increases the dissatisfaction with their life quality.

The fifth stage: "punching the wall". There are problems with carrier and the worsening of physical condition which can convert to acute form. Most psychological problems can manifest in an unstable emotional state, anxiety and even depression. In conclusion, there is a huge threat to the physical, social and mental state of the person.

It should be considered that the development of burnout is strongly individual and is determined by differences in the emotional and motivational fields, as well as the conditions in which a person's professional activity is conducted.

Some researchers consider burnout as an outgrowth of various stress factors (Maslach, 1993, Abrumova, 1985, Boyko, 1996). Nevertheless, others examine the burnout syndrome as a type of stress where the employee's communication circle serves as a major stress factor (Maher 1983, as cited in Udovik at al., 2018; Kondo 1991, as cited in Udovik at al., 2018). Some of the authors, including L. Morrow regarded burnout as a strange psychiatric chimaera (Morrow, 1981). According to the results of researches undertook by A. Richardsen (1996, as cited in Udovik at al., 2018) the burnout differs from other forms of stress, which is not just an unstable synonym for more established signage of these symptoms.

Burnout syndrome in the description of M. Corey (1986, as cited in Udovik at al., 2018) and S. Naisberg-Fennig et al. (1991, as cited in Udovik at al., 2018), is expressed mainly in a depressed state, a feeling of fatigue and inner devastation along with the lack of energy and enthusiasm, and loss of capacity to see beneficial results of their work, negative attitudes towards work and life. Burnout syndrome is possible to define as a complex psychophysiological phenomenon that is defined as emotional, mental and physical exhaustion due to prolonged emotional exertion in general (Udovik at al., 2018).

B. Pierce, C. Mark and G. Molloy (1990, as cited in Udovik at al., 2018) pointed out that burn rate was not related to the level of salaries with an insignificant level of intelligence and objective difficulty of the biography. So, it means that smart, ordinary, prosperous, and experienced people had the same tendency to burn out. There was only one factor which was common regarding the level of burnout which people have on – a person's willingness to take over or give external circumstances responsibility for everything that happens in life (Udovik at al., 2018, p. 26). Psychologists identified this readiness as a level of internality and externality. Internality is considered as the willingness to find a way out in desperate situations – is generally considered to be a major factor in helping a person to survive (Udovik at al., 2018, p. 27). There is no dependence on age, but it is usually a characteristic of the mature personality. Infantile people tend to

shift their responsibility to external factors (someone else should be responsible) and they are strongly dependent and eager to seek support in someone more powerful than them.

In terms of the improvement of the burnout manifestation of C. Maslach et al. (2001), A. Langle (2003) decided to add a fourth factor such as vital instability. He also included the list of main contextually crucial socio-economic prerequisites regarding the conditions of modern life such as (Udovik at al., 2018):

- professional foregone contribution of personal abilities and unemployment;
- currency imbalance and its stability in the currency market;
- declining living standards and uncertainty about prospects;

The emerging of burnout, in this case, can be compared to the feeling of futility of life which can be manifested in a depressed mood, feeling of hopelessness, anxiety, aggressiveness and irritability, depressive disorders etc.

The post-soviet scientific literature does not have a proper concept of "burnout" where the term is practically not used. Instead, there is a huge variety of different terms such as "professional burnout syndrome" (L. Karamushka, T. Ronginskaya, L. Yuryev), "emotional combustion" (T. Formanyuk, T. Yatsenko), and "syndromic burnout" are common as well, (T. Vasheka, O. Konoplytska, N. Samykina, N. Yanusheva), "burnout syndrome" (V. Vid), "burnout syndrome" (V. Boyko, V. Dudyak), "mental burnout" (N. Vodopyanov, O. Rukavishnikov) (Lysenkova & Honcharova, 2018).

According to E. Ilyin (2008), there are three groups of factors that play a significant role in the formation of burnout: personal, role and organizational.

According to P. Sidorov (2005, as cited in Malyar-Gazda, 2015), the main cause of burnout is psychological fatigue. When requirements for a long time outweigh the internal and external resources, a person follows disequilibrium which inevitably leads to burnout.

V. Boyko (1996) in his studies specified the burnout as a personality-produced mechanism of psychological protection in the form of complete or partial exclusion of emotions as the response to particular psycho-traumatizing actions. Therefore, burnout

according to V. Boyko (1996) is explained as a corollary to stereotype of emotional and most often professional behaviour that allows a person to dispense and economically consume resources.

He also emphasized on the explication of the burnout as a constructive and its consequences – dysfunctional in instances when burnout adversely affects the performance of professional activities and relationships with partners (Malyar-Gazda, 2015). At the same time, burnout can cause a person's professional deformation (Chutko &Kozina, 2013).

As to the representatives of certain professions, the most susceptible to the burnout are management staff, medical workers, managers, teachers, psychologists, salespersons, lawyers, social workers and law enforcement officials.

Nowadays, there are distinguished more than 100 symptoms related to burnout. Since 1974 when burnout was described for the first time in its history, there were published more than 2500 books and articles regarding this topic in different spheres (Kovalkova, 2016). Unfortunately, there are no unified views and diagnosis criteria on the burnout phenomenon in the modern concepts. Some researchers as C. Maslach, W. Schaufell and M. Leiter (2001, as cited in Kovalkova, 2016) consider the burnout in the framework of the adaption disorders and others think that this phenomenon is a disease of modern society or the type of chronic exhaustion. Furthermore, the WHO acknowledge that burnout is considered a huge problem among people and require a medical support (WHO, 1992, p. 330). According to the described theories, burnout is strongly related to the professional activity of employees and characterized as the state of physical and mental over exhaustion as the result of hardworking. Also the above-mentioned analysis demonstrated that the burnout syndrome is still evolving due to the occurrence of different opinions and can be viewed as a state of physical, emotional and mental exhaustion among employees as stated C. Maslach (1993). It is related today to the stress reactions regarding the chronical occupational, in particular, job-related difficulties.

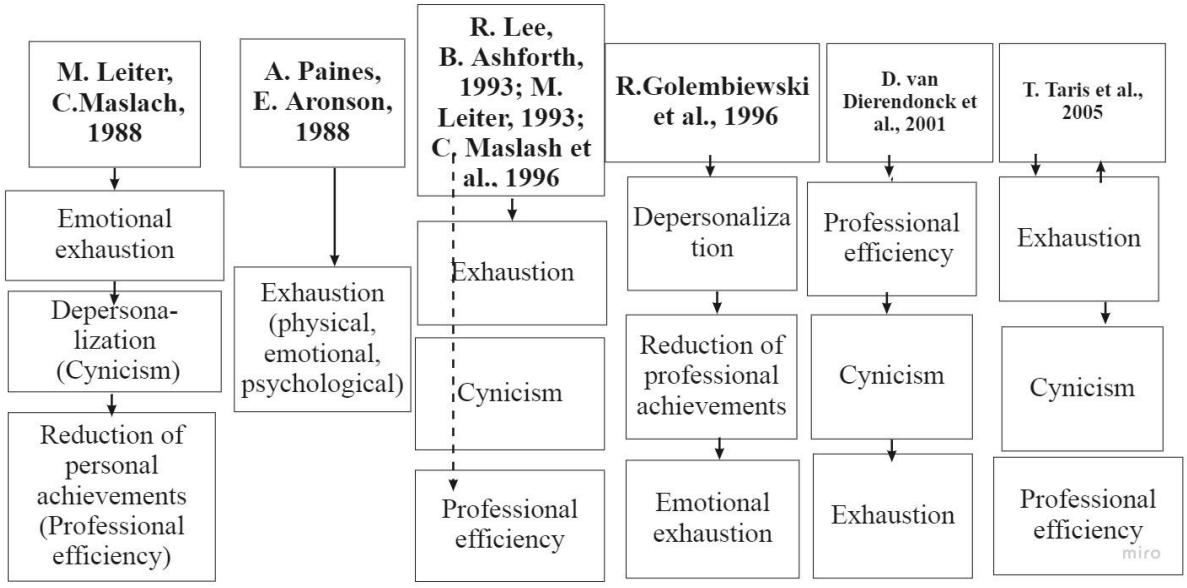
Most researchers have pretty much accepted the fact that burnout can be divided into different stages according to individual studies. At the very beginning of this process, significant costs of personal resources, mainly embodied in the energy, are noticeable. This phenomenon is possible due to the consequences of the considerable expenditure of the professional activity which is primarily based on the person's achievements. The occurrence of the fatigue with the first somatic signs of the sleep disturbance are evolving because of the rapid increase of stress and the quantities of expendable resources. Subsequently, the following feeling of irritation appears which is usually reflected in the public acrimony on colleagues or neglecting of clients.

At the conclusion, an employee encounters difficulty with the covering up of such annoyance and it can lead to the actual burnout. Thereby, the burnout is a type of confrontation with the outside world and the main symptom of this problem is an avoidance of the professional obligations and requests in the form of prevarication from work (days-off, coffee breaks, unplanned holidays, absences due to illness etc.). There is also personal evaluation of the situation by the employee whose major perception of oneself is manifested into the distrust to others and a painful feeling of personal failure, which leads to a change in the image of the Self. The growth of burnout ends with the loss of ideas about the values of life. After the detailed analysis of the theoretical approaches regarding the definition of burnout, it is possible to stress that it is a phenomenon which is strongly related to personal perception of working attitudes along with personal characteristics and environment. It also depends on the willingness to accomplish unrealistic achievements and effectiveness. Inability to recognize the level of personal limits by employees and organize the particular working conditions by the management of the company sometimes ends up with the more serious consequences.

1.2. Symptoms and factors of burnout

The burnout phenomenon is considered as a syndrome with a development of different stages and factors. Those factors are reviewed in the framework of different models which were created during the development of burnout concept. There are the most usually mentioned factors of burnout according to the widespread models (See Table 1.1.).

Table 1.1. The factors of burnout and its variations according to different researchers (Koltunovych, 2016, p. 33).



The analysis of this table considers burnout as a state of chronical exhaustion, depersonalization and reduction of personal achievements.

There are some researchers as P. Sidorov (2005) who recognized the syndrome of burnout as a result of the progressive and excessive loss of emotional, cognitive and physical energy (resources) which can be experienced in the symptoms of emotional and mental exhaustion, physical exhaustion, personal distraction and reduced job satisfaction.

According to C. Maslach (1993; 2001), the main reason for the burnout is the psychological and mental fatigue from the forced communication due to the occupational activity. This state occurs especially quickly and noticeably with the excessive workload of people who because of the characteristics of their professional duties should be empathetically involved in interpersonal interaction with people as much as possible. There is the list of people from occupational spheres such as psychotherapists, psychologists, social workers, teachers, doctors and managers, who can be classified under the one group of communication professionals who are trained to politely and professionally serve others (Maslach, 1993). Those professions are particularly vulnerable to burnout.

The huge influence of stressful factors causing the phenomenon of burnout covers a wide range of professions. According to E. Maher (1983, as cited in Chutko &Kozina, 2013) and K. Kondo (1991, as cited in Udovik at al., 2018) who paid special attention to the interpersonal relationships of employees with others, there are distinguished two major groups at risk that are succumbing to burnout. Particular attention was given to social services by K. Kondo (1991, as cited in Udovik at al., 2018) who stated that employees may suffer much because of a usually intolerant, competitive, aggressive manner of their clients' interaction. The second risk group is considered to be workers of a dominant type with weak empathy (Maher, 1983, as cited in Chutko &Kozina, 2013).

According to the M. Burish model, there are some stages and phases of the development of burnout syndrome (See Table 1.2.) (Udovik at al., 2018).

The significant energy costs are a preliminary symptom for the burnout. It arises as to the result of an extremely high positive attitude towards the implementation of professional activities. Thus, burnout is a result of prolonged stress at work and certain types of occupational crises. The occurrence of burnout syndrome is characterized by a strong feeling of fatigue, which is gradually replaced by disappointment and a decrease in

work interest. Also, a strong dependence on work ultimately leads to complete despair and existential emptiness of an individual.

Table 1.2. The symptoms of burnout (Udovik at al., 2018)

Behavioural symptoms	Working time more than 45 hours per week; The feeling of fatigue and the desire to rest; Indifference to food; Low physical activity; Excuses for the consumption of tobacco, alcohol and medical supplies; Accidents – fall, injuries, incidents and crashes; Impulsive emotional behaviour;
Intellectual (mental) state	Decrease of interest for the new theories and ideas regarding work and alternative approaches in the problem solution; Boredom, yearning, apathy, a decline in interest of life; Growing preference of standard templates, routine rather than creative approach; Cynicism and indifference to innovations; poor participation and denial of being involved in the developmental experiments – training, education; formal work performance;
Social symptoms	Low social activity; Low interest to entertainments and leisure time; Social contacts extend beyond work; Scares relationships at work and home; The feeling of isolation, misperception of others and by others; The feeling of lack of support from the family, friends and colleagues.

Studies by A. Brodsky (1980), C. Maslach (1986) and D. Edelvich (1980) emphasized on the prerequisite presence of 3-4 stages in the development of burnout syndrome, showing its development, syndrome deepening (Chutko & Kozina, 2013). C. Maslach has distinguished 3 stages (Chutko & Kozina, 2013, p. 17-18):

The first stage is responsible for performing functions of arbitrary behaviour: forgetting some moments, blackouts, malfunctions in performing of any motor actions etc. Typically, few people draw their attention to those initial symptoms and refer to those

as a short memory or “sclerosis”. The first stage of burnout can last from 3 to 5 years and depends on the nature of the professional activity and the personality traits of the specialist.

The second stage is characterized by the considerable decrease in interest in to work along with the need for communication at home and with friends, an increase in appetite, the appearance of sustainable somatic symptoms (no strength and energy, especially by the end of the week, headaches in the evenings; sleep without dreams, an increase in the number of colds and other illnesses with increased irritability). This stage can develop on average from five to fifteen years.

The third stage is a key on related to the personality burnout and is reviewed by a complete loss of interest in work and life in general, emotional indifference, dullness, a feeling of constant lack of strength. On this stage, a person is looking for a possibility to be alone and far from the communicational sphere (communication with animals and nature) and this stage can last from ten to twenty years.

The special attention is needed to the two key symptoms of burnout as frustration and apathy (Udovik at al., 2018). Frustration is a psychological state arising in a situation of the real or anticipated impossibility of satisfying certain needs (Lotova, 1999, as cited in Udovik at al., 2018). In general, it is a situation of a mismatch of desires with existing opportunities and can be seen as a traumatic one. This symptom can be noticed on the early stage of burnout and clarified the situation to the extent of seeking for help. It emerges in case of the lack of expected and desired result but in this state, people also keep trying to continue to struggle to obtain the desired success or achievement (Udovik at al., 2018). Apathy, on the contrary, is the symptom which is manifested in the indifference and a detached attitude to the outside world, in the absence of a desire for any activity. This symptom is accompanied by a lack of external emotional manifestations, and sometimes a decrease in strong-willed activity (Zahovaeva, 2003, as cited in Udovik at al., 2018). Apathy is a typical and very natural defence mechanism against frustration

(Udovik at al., 2008, p.46). The interaction of these two symptoms allows an individual to ignore chronic stress for a long time.

So it is possible to distinguish some additional symptoms of burnout which can emerge at the first stages of this phenomenon. Those two symptoms should be also taken into account as important ones to identify the burnout. So apathy and frustration should be regarded as another significant causes of burnout. The reason for these symptoms mainly is in the unsatisfied desires and unreachable expectations.

There are distinguished 3 major symptoms of burnout in the scientific literature such as exhaustion, personal detachment and the feeling of personal inefficiency along with the 4th symptom (see Table 1.3.) which was developed by G. Sonneck in 1994 according to S. Udovik at al. (2018).

Table 1.3. The major symptoms of burnout (Udovik at al., 2018, p. 47-49)

The title of the stage	Description	Impact on the environment
Exhaustion	- a feeling of overstrain and exhaustion of emotional and physical resources; - a feeling of fatigue that does not pass after a night's sleep; - short-term decrease of symptoms after rest;	- signs of physical and emotional exhaustion are observed among specialists working in the "human-human" system; -
Personal detachment	- developed emotional detachment as an attempt to cope with emotional stressors at work; - a person, almost nothing excites from professional activities; - almost nothing causes an emotional response - neither positive nor negative circumstances;	- interest in a client (patient) is lost, which is perceived at the level of an inanimate object, the very presence of which is sometimes unpleasant.
The feeling of loss of one's effectiveness, or a drop in self-esteem as part of burnout	- no visible prospects in one's professional activity; - lack of job satisfaction (decrease); - lack of faith in one's professional capabilities;	- avoidance of personal contacts in the occupational sphere;

Vital instability according to Sonnek, 1994.	- depression and depressed mood; - excitability; - a feeling of smallness; - anxiety; - distress; - sense of hopelessness and irritability.	- development of a pre-suicidal state;

J. Edelwich and A. Brodsky (1980, as cited in Chutko & Kozina, 2013, p. 17) also described burnout as a process of increasing frustration, developing in four stages: enthusiasm (excessively high and unrealistic expectations where work takes an important place in life); stagnation (reduced high expectations with an emphasis on one's own needs; can be followed by frustrations due to increasing helplessness (low salaries, insufficient psychological support, conflicts in the organization) and also apathy (leading to reduced contacts with colleagues).

According to E. Maher (1983, as cited in Chutko & Kozina, 2013, p. 26), a list of burnout symptoms can be summarized:

a) tiredness, fatigue, exhaustion;

b) psychosomatic malaise;

c) sleep disturbances;

d) a negative attitude towards people;

e) a negative attitude to the scope of work;

e) the scarcity of the range of work actions;

g) misuse of chemical agents (coffee, tobacco, alcohol, drugs, medicines);

h) overeating or lack of appetite;

i) negative self-concept;

j) aggressive feelings (irritability, tension, tension, anxiety, exhilaration, anger);

k) reduced mood and emotions associated with reduced mood (pessimism, a sense of hopelessness, apathy).

S. Kahill (1988, as cited in Chutko & Kozina, 2013, p. 26) also offered 5 groups of burnout symptoms: 1) emotional, 2) physical, 3) behavioural, 4) cognitive and 5) social. On the contrary, V. Boyko (1996, as cited in Chutko & Kozina, 2013, p. 29-33) developed a detailed 3-phases model of burnout development (See Table 1.4.). The model developed by V. Boyko is usually used for the identifying of burnout symptoms and its major phases of development.

Table 1.4. The 3-phases model of burnout development according to V. Boyko (1996, as cited in Chutko & Kozina, 2013, p. 29-33)

Title	Phase I - Tension	Phase II - Resistance	Phase III - Exhaustion
Symptoms:	- experience of psychotraumatic events; - personal dissatisfaction; - the strong feeling of being caged - anxiety and depression;	- inadequate selective emotional response; - emotional and moral disorientation - expanding the scope of emotions economy; - reduction of occupational responsibilities and obligations;	- emotional deficit; - emotional detachment; - personal detachment (depersonalization) - psychosomatic and psycho-vegetative disorders.

This general description corresponds to the development of a neurotic state which is a neuropsychic disorder as a result of a violation of a person's particularly significant life relationships (the clinical state without psychotic symptoms) (Chutko, Kozina, 2013).

Burnout emerges not only in the framework of personality but across the organization. That phenomenon was described by the C. Cherniss (1980, as cited Chutko & Kozina, 2013, p.38) describes with the following features:

- high attrition rate;
- decrease of work involvement of employees;

- dependence mode expressed in the form of anger regarding leadership and helplessness and hopelessness;
- development of critical attitude towards employees;
- insufficient cooperation among staff;
- a progressive decline regarding the initiative;
- increased feeling of dissatisfaction of executable work;
- manifestations of negativity regarding the role or functions of departments.

The first description of burnout factor such as physical exhaustion and disappointment was accomplished by Freunderberg (1974). The factors of burnout also were researched by I. Galetska and M. Melnyk who brought attention to the lower probability and intensity of burnout in those specialists with a positive attitude towards the world and a higher level of self-esteem (Chernikova et al., 2001, as cited in Malyar-Gazda, 2015, p 2.) and to E. Ozhogova (2008, as cited in Malyar-Gazda, 2015, p 2.) in her research showed that for professionals with no or little burnout, a harmonious ratio of components in the system of life orientations and the prevalence of such terminal values as "spiritual satisfaction", "creativity" and "active social life" and workers with the partially or fully formed syndrome have inconsistencies in the system of life orientations and dominance of terminal values – "preservation of one's personality", "development of self" and "high financial status".

V. Bodrov noted that people with low self-esteem manage stress worse than people with high self-esteem, but in the case of high self-evaluation regarding their profession, they are less likely to interpret many events in their work as stressful (Malyar-Gazda, 2015).

According to N. Grishina, the burnout is not only limited to the professional sphere and stressful nature of professional activity but losing a person's sense of the meaning of their professional sphere. Along with the personal devaluation of efforts and loss of faith

in the meaning of life, in general, it is experienced as an intrapersonal conflict of a person (Malyar-Gazda, 2015).

Factors of burnout can be also classified on the external: organizational and those which are related to the specifics of the occupational activity and internal (personality peculiarities and traits) (Koltunovych, 2016). That means that organizational aspects have important influence on the burnout long with the traits of individuals.

M. Pierce and G. Molloy (1990, as cited in Koltunovych, 2016) who undertook studies in the field of burnout stated that there is no linkage between the burnout and the level of personal skills, intelligence, the quality of education and salary. They strongly pointed out that the main reason for burnout is the working environment in the company and personal attitude of an employee to the work. Conversely, K. Maslach and S. Jackson found a strong relation between burnout and higher education (college, university) (Schaufeli, 2003). They also underlined that the main cause of burnout in this situation is overburdening and unbearable responsibility which is decided to take in order to prove to oneself and others that the person is capable and special.

According to the T. Koltunovych (2016) it is possible to distinguished 3 major approaches to the burnout development and its main factors:

1. Social and psychological in which burnout is characterized as the lack of support, emotional overburdening, high tension regarding the personal contacts. Also, in the framework of this approach, R. Kochunas in 1999 stressed that there are such factors which have an influence on the occurrence of burnout as the dubious meaning of work, high costs of personal resources due to lack of recognition and positive evaluation and unrealistic terms of work (Koltunovych, 2016).

2. Organizational which is reflected in the lack of autonomy, support and rewarding system in the company. There is also highlighted the problem of insufficient communication between management and employees, budget limitations, lack of regulation of working time duration.

3. Interpersonal which describes such factors of burnout as a motivational and emotional sphere of the employee. The most significant problems which are considered within this approach are the high expectation to work and the real state of things and a high discrepancy between personal needs and the possibility of its satisfying in the professional field.

Advanced classification of burnout factors was created by V. Orel (2005, as cited in Koltunovych, 2016, p. 41-42) who included:

- individual factors (age, sex, the overall work experience, the level of education);
- personal factors (self-esteem, neuroticism, extraversion, endurance);
- professional motivation (values);
- cognitive processes (capabilities);
- organizational (the working conditions – overburdening, lack of time; the meaning of work – independence of work, communication).

Job satisfaction in the framework of job characteristics also should be considered as a factor of burnout. N. Vodopyanova and E. Starchenkov stated that job dissatisfaction can be one of the major risks of burnout (Udovik at al., 2018). Another researcher M. Hann (1979, as cited in Udovik at al., 2018) found a negative linkage between the risk of burnout and job satisfaction and that means that there is a correlation between job satisfaction and risk mitigation of burnout. People who are gratified with their job are less susceptible to burnout.

According to H. Chen, P. Wu & W. Wei (2012) characteristics of a job and the level of work overburdening can contribute to burnout among employees. Also, job characteristics and specifics of organizations along with personal traits can be considered as significant elements of job satisfaction and burnout.

Job characteristics play an important role in being the predictors of burnout but there is another scope of elements which can have a significant influence on the burnout. Those factors are personality characteristics which are viewed by some researchers as

crucial (Jacobs and Dodd, 2003). The personal perception of working conditions is important according to C. Maslach and colleagues (2001), and that is why people tend to individually identify the level of stress in a particular situation. It depends on their personality traits. M. Chung and C. Harding (2009) found that personality particularities have a major influence on the personal experience of stress major threats and emotional and psychological response. It was found by G. Gustafsson and colleagues (2009) that emotional stability can predict this phenomenon. It is important to emphasize on the fact that the high level of neuroticism can predict exhaustion and depersonalization when extraversion along with openness can forecast individual attainment (Chutko & Kozina, 2013).

In some case, burnout is considered mostly as a consequence of industrial stresses, as a process of maladaptation to the working environment, workplace or occupational obligations. The main predisposing element for burnout is the superfluous pressure in cases of extensive interpersonal relations. Also, stress can be an important factor of the burnout according to some research. H. Selye equated the burnout to the distress in the extreme display and the stage of general adaptation syndrome (exhaustion phase) (Malyar-Gazda, 2015). By the way, T. Holms and R. Rahe in 1967 pointed out that stress is the level to which people need to change and adjust their lifestyle in response to an external occasion (the more changes the greater is the stress) (Chutko & Kozina, 2013). To conclude, it is obvious that stress is a cause of various difficulties related to working environment and other occupational difficulties which can be related to sleep problems. Probably, people who feel more pressure and are overwhelmed by diverse stress factors experience more troubles with falling asleep and waking up. It can have a major impact on the general health conditions and on the burnout occurrence as well.

That is also important to describe a psychodynamic aspect regarding the burnout issue. That is crucial to emphasize that, according to A. Pines and E. Aronson (1988, as cited in Pines, 2002), a gap between expectations and accomplishments leads to the

development of unsatisfactory feelings which can cause burnout. H. Friedman (2000, as cited in Pines, 2002) pointed out that self-productivity can be perceived as a component of burnout. Burnout can emerge also when a person is investing much more personal resources than obtaining from other people. That creates a situation of personal disappointment with the expected results. People who are unsatisfied with their expectation are also frustrated. A. Pines (1993, as cited in Pines, 2002) stated that the reason for burnout occurrence also can be a belief in the meaning of a person's life. It is possible, that there is a strong need to feel that there is some hidden sense of what person if doing. That can explain why people become more hardworking and devoting to their jobs. In this way, they keep trying to satisfy their need to be important and find the meaning of their professional activities. The religious aspect was offered to explain why people are so devoted to their work and resulted in the need to find a sense and cause of living in their occupations (Pines, 2002). On the contrary, more religious people can suffer less from burnout because they don't have to fulfil the inner emptiness. This result may be related to the group with low emotional burnout.

From the psychoanalytical point of view, the reason why a person makes a choice considering a particular profession can underpin on the consciousness levels (Pines, 2002). So people are choosing their work with the help of some unconscious motives. H. Freudenberg (1980) underlined that people who tried to replace their social life with their occupation had more chances to experience a burnout. In that way, they tried to increase the importance of their activity but because of high requirement, they also can burnout. So, probably, among those who have a higher level of burnout are people who do not have a proper social connection or are excluded from social circles.

Another interesting implication was made by A. Pines and O. Yanai (2000, as cited in Pines, 2002) that people tend to choose a profession following their childhood traumas and in this way, they want to fulfil their unfulfilled needs and meet those expectations which their parents had towards them. Also, probably, their ego along with some wishes

are included in this process. The same thesis was made by the S. Vanheule (2003) that the burnout phenomenon results in the abandonment of the ego with the fact of accepting the ambivalent impetuses. According to C. Maslach and S. Jackson (1986, as cited in Vanheule, 2003), emotional exhaustion can be viewed as a feeling of being sick of the job, depersonalization as the state of avoiding personal contact with others and reduced personal accomplishment as the feeling of being not good enough after the task failure. So people may feel that they cannot reach certain expected results and that is why are tended to refuse to communicate with others because of negative self-perception.

Burnout can also be considered through Z. Freud and J. Lacan approaches (Vanheule, 2003). Psychoanalytic research conducted by Aubert and de Gaulejac stressed that people (mainly managers and owner of a business) are eager to succeed to meet the aspirations of others (Vanheule, 2003). So in this way, they are eager to be accepted and appreciated. It can lead to burnout because of lots of efforts and sacrifices. So people who tend to burnout can be characterized as those who sentimentalize their job and by their outrages engagement and perfectionism keep trying to achieve a self-image of the best employee and, consequently, demonstrate the putatively predicted comprehensiveness of ego (Vanheule, 2003). Depersonalization and anxiety can be demonstrated through ego loss as it is responsible for the unity of personality (Vanheule, 2003). So a person who loss ego has an unintegrated personality and cannot function appropriately. That is important to mention that burnout can occur when on the interpersonal level a parental part (Other) will be a threat for the recognition of the personally expected role of a person (Vanheule, 2003).

It was described in the work of S. Vanheule (2003) that burnout can be a result of losing an ego ideal value regarding the linkage of the subject and Other (parental part regarding the Lacan's' Theory) and can lead to the insufficient work accomplishments. Also because of this loss, the person is losing a part of its identity and can end feeling the lack of something significant or even empty. This ego ideal also helps to identify a

person's himself/herself. According to Forney et al., people with the burnout symptoms perceive a parental part as the hazard and deception and refer to a critic towards their accomplishments as a consequence of their setbacks (Vanheule S., 2003).

Z. Freud (1926, as cited Vanheule, 2003, p. 126) pointed out that there is a phenomenon of neurotic inhibition and his work is considered to be a function of ego, any difficulties or abolitions of this function on the unconscious level may lead to burnout. Also, he stressed that exhaustion can be caused by the gap indicated by super-ego between actual and ideal ego when a person keeps trying to perceive and idealize himself/herself by the means of the job (Vanheule, 2003). Thus, H. Freudenberger (1974, as cited in Udovik at al., 2018) considered a burnout through the level of ego. When a person attempts to refuse a real self and transform himself/herself under particular standards during a long time, such person may lose an authentic identity and be at risk of burnout (Vanheule, 2003). It was stated by B. Berger (2000, as cited in Vanheule, 2003) that there is a relation with a demanding surrounding and self-demanding behaviour along with tendencies to punish oneself because of the fear. Such people can burn out faster because of complete work exhaustion (Vanheule, 2003). So the problem of ego disintegration is a major problem of a person with burnout.

There are important personality traits which can determine people who have tendencies to burnout phenomenon. So according to A. Cooper (1986, as cited in Vanheule, 2003) and A. Horner (1993, as cited in Vanheule, 2003) people with narcissistic proclivities are more likely to idealize their interrelation to object (work) and it causes insufficient efforts. Such type of people can overestimate their abilities and because of the wish to be perfect and the best, they can burnout as a consequent of excluding the balance from their life. People who have masochistic proclivities in case of the situation which evokes boredom and anxiety can accept the role of the victim and it leads to burnout (Vanheule, 2003). This type of people has a strong feeling of guilt and that is why they work more and keep trying.

1.3. Main characteristics of sleep. Sleep and burnout

The burnout can be characterized through the problems with sleep. Thus, it is important to specify the main characteristics of sleep. The common definition of sleep is that is a phenomenon which can be described as a physiological state of the brain, nervous system and organism and is characterized by a weak response to external stimuli and a special activity of the brain neurons (Pulyk & Giryavets, 2006, p. 4).

The process of healthy sleep is an integral, inevitable and significant part of a person's life. Sleep is also considered as an invaluable source of well-being, good mood, an indispensable resource for preserving beauty and youth. Regarding the discussion about the most important characteristic of sleep, however, duration of sleep considered to be not a determinant of its quality: the need for rest is determined individually for each person and that means there is no unanimous opinion about the how long should a healthy sleep be (Druzhilov, 2013).

The wakefulness-sleep cycles are normally connected to day-night changes. Light is the factor that is responsible for synchronizing this cycles (Pulyk & Giryavets, 2006, p. 5). There is also its huge dependence on social factors, working conditions, and adaptation of the sleep periods. Another important point is that the state of wakefulness is mainly a condition of full contact with the outside world, where there is a process of absorption of impressions under the influence of environmental factors and active reaction to them (Pulyk & Giryavets, 2006). Sleep disables consciousness and suspends access to impressions. The process of sleep decelerates motor activity and many other autonomous processes of the organism (Pulyk & Giryavets, 2006). Both sleep and wakefulness should not be considered monotonous as they consist of appropriate states that cycle in one another.

There are individual characteristics to the understanding of the normal sleep duration. It is appropriate to take into consideration the normal amount of sleep within 6-8 hours for the working-age population and 4-6 hours for elderly people (Pulyk & Giryavets, 2006). That is also important to indicate that sleep can be considered as sufficient when there is the feeling of rest after waking up. Therefore, there is no single commonly accepted point of view on the required amount of sleep because this duration can be different regarding the temperament, attitude to life and psychophysiological features (Pulyk & Giryavets, 2006). There is a traditional division on well-known and popular types of sleep habits as larks and owls who are accustom to either morning or late work, as well as pigeons who are not under the pressure of these rhythms and can adapt easily to both night and day activities (Pulyk & Giryavets, 2006).

The process of falling asleep is divided into a slow sleep which is characterized by four stages of sleep consistently:

- napping,
- shallow sleep,
- moderate-depth sleep
- deep sleep.

The first stage of slow sleep lasts for about 9 minutes in a state of slumber with its typical half-dream dreams which are followed by the stage of shallow sleep lasting from half an hour to 45 minutes (Pulyk & Giryavets, 2006). The person can see nightmarish dreams that are usually hard to remember most in the last two stages of shallow sleep (one lasting a few minutes, the other lasting about half an hour). The final stage of slow sleep ends with a change in posture which is followed by a sudden transition into a paradoxical (fast) sleep phase lasting 15-20 minutes (Pulyk & Giryavets, 2006). During this phase, the person sees dreams that he or she is more likely to remember (Pulyk & Giryavets, 2006). The main structure of sleep along with its duration has the possibility to change with age

and some personal circumstances. For example, newborns are dominated by paradoxical sleep, and in adults mainly by slow sleep (Pulyk & Giryavets, 2006).

In the vast majority of scientific literature, the definition of sleep is explained as the process of being in complete balance with minimal activity of all structures of the human body. When a person is sleeping there are happening such processes as:

- reduced activity of metabolic processes;
- reduced activity of muscle tone;
- the processes of anabolism are activated;
- the nerve structures are inhibited.

It was proved by many further researchers as M. Makarchuk et al. (2011) that sleep can be seen not just as a process of taking a rest, but as an active state of the body which is mainly characterized by a specific form of brain activity. Among the other things, during the process of sleep, there is a reviewing and analyzing of information accumulated by the person before (Lisova & Pavlynska, 2016). Therefore, it is possible to point out that after an appropriate amount of sleep, the human brain is released from the excess information accumulated by day and is prepared for the further work (Lisova & Pavlynska, 2016). Owing to this process, the person can normalize the neuro-mental state and restores the full work capacity of the brain.

A. Meneghetti (1997) stressed, thus, that sleep consists of not only physiological but also psychological factors and can be a response to any person’s needs.

Speaking about physiological and psychological aspects of sleep, therefore, sleep and dreams (which in Slavic, including Ukrainian language can be described, however, by the same word), can be distinguished. Dreams are also described as a result of specific brain activity (probably, by chaotic neuronal relaxation (Pulyk & Giryavets, 2006; Makarchuk et al., 2011). However, they have an important psychological aspect, being described by I. Sechenov as "unprecedented combination of experience" (Lisova & Pavlynska, 2016, p. 110). In modern science dreams are considered to be phenomena

happening for information overwork (Domhoff, 2000) and emotions to be expressed (Nielsen et al., 2001).

V. Brezovsky lyrically stated that healthy sleep is a dream without dreams. Because one sees dreams when he sleeps shallowly (Lisova & Pavlynska, 2016). On the contrary, other experts found it extremely important to sleep with dreams. I. Beskova (2005) believed that the person is deprived of the opportunity to see dreams, there can develop personality disorders as the consequences of such activity.

There is a common opinion about the state of healthy sleep that here are several features (Lisova & Pavlynska, 2016):

- a person falls asleep quickly and unnoticed to oneself;
- depth of sleep allows a person not to respond to external stimuli, so it means that sleep is not very sensitive;
- sleep duration is not too short for a person regarding personal particularities;

Therefore, healthy sleep cannot be interpreted as a certain amount of time that a person has spent only in asleep mode. It should be identified as a deep, calm and continuous process (Lisova & Pavlynska, 2016).

In the absence of healthy sleep, the possibility of a productive day life is rapidly decreased. Also, there is a relation between the quality of sleep and the number of awakenings per night. The dependency of such activity is that the less person wakes up in the night, the better is sleep and there are considered the better effects for the psycho-physiological state of the human being upon awakening (Lisova & Pavlynska, 2016). The unconditional interrelatedness and crucial differences of sleep characteristics, such as duration, quality, depth, and durability were demonstrated (Lisova & Pavlynska, 2016).

The quality of sleep is a measure of a quantitative and qualitative component of sleep. The quantitative component includes a duration of sleep and a qualitative component can be a subjective measure of the feeling of calmness during the waking up (Lisova & Pavlynska, 2016). Good quality of sleep is associated with the vast spectrum of positive

results such as health improvement, a decrease of daily sleepiness, improvement of personal well-being and psychological functioning (Denisiievska, 2019). Bad quality of sleep can be the reason for insomnia in some cases. The quality of sleep can be measured by the Pittsburg questioner of quality of sleep (Denisiievska, 2019). If the duration of the night's sleep is reduced by 1.3-1.5 hours, it can affect the state of concentration in the daytime (Denisiievska, 2019). Even a small chronic sleep deprivation (for 1-2 hours) is fraught with serious malfunctions if it constantly requires a high level of attention (Denisiievska, 2019).

When we are talking about the sleep deprivation it is important to emphasize on the studies which show that sleep deprivation just for 3-5 days may cause an overwhelming need for sleep. The main symptoms of such phenomenon are: a decrease in the speed of mental reactions, decreased mood, disorientation in the environment, a sharp decrease in mental and physical performance, as well as the effectiveness of all mental processes and phenomenon's such as memory, thinking, speech, attention and will (Pryschepa & Efemenko 2013). Those studies also demonstrated that sleep reduction is usually attributed to those periods of life when a person is feeling well, interested in work, and free of anxiety (Pryschepa & Efemenko, 2013). The need for sleep increases when unsolvable problems arise and it that case mood and performance decrease.

There are also the individual-psychological properties of the sleep disturbance and further problems as: noncompliance of sleep hygiene; the presence of dysfunctional beliefs about sleep; high levels of neuroticism; psychoticism; radicalism; aptitude for self-blame; arrogance (Lisova & Pavlynska, 2016).

In the context of the burnout inquiry, the lack of sleep is a crucial factor. The process of sleep deprivation can cause within a few days an effect when the consciousness of the person loses its clarity (Pryschepa & Efemenko, 2013). Later on, the recoil of sleep happens, that is, an increase in the duration of the subsequent sleep. Firstly, the need for a slow sleep is satisfied, and afterwards the length of REM sleep restores. Another

important issue is that lack of sleep which leads to sleep disturbance interferes with the emotional sphere in the way that a person becomes irritable and emotionally unstable, the effect of negative events increases, and a positive experience is dulled and sometimes erased (Pryschepa & Efemenko, 2013).

Not only sleep itself should be characterized for its links to the burnout but also dream and its meaning. N. Grotto focused on the description of dreams as he believed that dreams are mostly person's daytime thoughts, feelings, and desires (Stoyukhina & Kostrigin, 2014). The first one who regarded dreams as a special and important brain language was Z. Freud (Stoyukhina & Kostrigin, 2014). He also believed that dreams are the product of our mental activity. At the same time, he also suggested that dreams contain not only explicit, obvious meaning that can be expressed in a parable, but also hidden, implicit, which cannot be immediately explained or understood (Stoyukhina & Kostrigin, 2014). The major content of dreams can be considered through the attempt to solve problems relevant to a person by means of imaginative thinking (Stoyukhina & Kostrigin, 2014). These statements suggest that dreams are the result of the implementation of unconscious thinking in the dream, aimed at meeting the various needs of a person, which contributes to a more harmonious adaptation of the body to environmental conditions. From this point of view, dreams can be seen as the result of complex reflex activity during sleep, which is based on the realization of an instinct aimed at meeting needs (Stoyukhina & Kostrigin, 2014). This view is particularly corroborated by data showing the possibility of managing the content of dreams.

Undoubtedly a role is played by the lack of dreams, which reflect the internal problems of the individual, are like a safety valve, through which, figuratively speaking, there is accumulating steam, which increases the pressure. Personality in the dream manifests itself freely, notwithstanding social and ethical constraints (Stoyukhina & Kostrigin, 2014). It is possible that they are necessary for the normal mental activity of a person, and the deprivation of this regulatory apparatus disturbs the mental equilibrium.

All adults see their dreams every night during REM sleep and partially during a slow sleep - at least 4-6 times. Thus, the total time of dreams viewing is 60-100 minutes per night. Dreams include visual stimuli such as images and scenes in almost 100% of cases, auditory stimuli occur in about 10% of dreams (Pryschepa & Efemenko, 2013). Regarding the characterization of dreams along with burning out, people with a positive emotional status or in a balanced mental state see dreams with soft, gentle colors and halftone predominate (Pryschepa & Efemenko, 2013). Oppositely, people with negative emotions have dreams painted in red tones, with black and white dreams where black color becomes very intense (Pryschepa & Efemenko, 2013).

Since the burnout syndrome has attained its popularity in the scientific fields because of the influence on the productivity of work and a huge amount of sick leaves among employees, according to B. McEwen (2004, as cited in Söderström et al., 2012) it becomes a crucial problem for countries oriented on the industrial economy. There is a list of important factors indicated by P. Merlani et al. (2011, as cited in Söderström et al., 2012) which has a major impact on the burnout such as insufficient support on the workplace, some personal conflicts, related work stress, workload and ambiguity of obligations on the workplace. S. Melamed et al. (1999, as cited in Söderström et al., 2012) and S. Linton (2004, as cited in Söderström et al., 2012) emphasized the fact that those who suffer from burnout have problems with sleep. Some researchers have indicated that sleep has an essential role in maintaining the healthy state of the body and brain functioning (Benington & Heller, 1995) so that is why sleep deprivation is responsible for the higher sensitiveness to stressful and emotional occasions. By contrast, it is possible to alleviate the stress influence by employing enough sleep. Kuppermann et al. (1995) in his research has admitted that there is a correlation between higher job satisfaction and lower level of problems related to sleep. By the way, some studies have demonstrated the predictability of sleep disturbance by the amount of workload and some efforts accomplished to work (Marquie, Foret, & Queinnec, 1999).

Burnout has strong relations with complaints regarding sleep according to A. Vela-Bueno et al. in 2008 and S. Melamed et al. in 1999 (Söderström et al., 2012). According to M. Vandekerckhove and R. Cluydts (2010, as cited in Söderström et al., 2012) sleep deprivation can be crucial to undergo of emotive and stress-related situations. It was proved by J. Nilsson et al. (2005, as cited in Söderström et al., 2012) that an insufficient amount of sleep may evoke such symptoms of burnout as fatigue, sleepiness and cognitive dysfunction. That is also significant to underline that sleep disturbance can be expressed in the type of some sleep disorder like insomnia. G. Armon, A. Shirom, I. Shapira, and S. Melamed (2008, as cited in Söderström et al., 2012) found that those two phenomena (burnout and insomnia respectively) can play an important role in the process of each other's occurrence. In the study of M. Sonnenschein et al. (2008, as cited in Söderström et al., 2012), it was explained that some sleep difficulties can be predictors of a late return to the workplace and work in general.

There are some studies which show the connections between the main components of burnout and the sleep problems among employees. Nowadays work and work-related factors are indicated to be the most important stress factors. Within burnout development there is a type of psychological detachment which is a key symptom for the distancing oneself from the excessive and stressful experiences which have a negative impact on the mental health.

S. Sonnentag and U. Bayer (2000, as cited in Söderström et al., 2012) stressed that people who are dealing with the psychological detachment keep trying to reduce involvement into the job-related difficulties with the help of being absent on the workplace and attempting to postpone the tasks. That process is also related to sleep disturbance in a way of thinking about the job-related tasks outside the workplace which may cause a negative impact on mental health. It is possible to conclude that psychological detachments from any type of activity especially from the work can be a predictor of burnout and if there is no possibility to diminish the consequences of detachment

impossibility, the stress factor will stay with negative consequences (Söderström et al., 2012).

T. Åkerstedt and colleagues (2002, as cited Ekstedt, 2006) demonstrated that the phenomenon when people cannot stop thinking about the work-related issues in the evening is the most significant predictor for other sleep problems. However, when people can recuperate from the stress, that is the most important part of sleep improvement. As it was stated above, it was also proved that thoughts about work are likely to cause problems with sleep and, consequently, burnout (Söderström et al., 2012).

The research regarding the relationship between physical activity, sleep and burnout symptoms (Benediktsson, 2019) provided shreds of evidence that there is a correlation between the thoughts related to job and sleep problems among participants. There were also proofs that it is important to be mentally detached from those thought to prevent sleep problems. Also, this study provided a piece of important information that the people who suffer from sleep difficulties were having a higher score of burnout symptoms (Benediktsson, 2019). In conclusion, a person who experiences difficulties with personal detachment from work-related thought has higher chances to suffer from the burnout in the future.

In the contemporary world, the precondition to effective existence has changed. Modern society decided on the new model of life which is called the 24-h society and it causes negative effect on the setting of personal boundaries regarding the perception of day and night, erasing the borders of free time from work and working time in general (Söderström et al., 2012). B. McEwen and E. Stellar (1993, as cited in Söderström et al., 2012) stated that it may have a negative implication on the long-term perspective of health and sleep in particular. There were also conducted a handful of cross-sectional research by A. Ota in 2005 and G. Fahlén in 2006 regarding the occupational stress along with the influence on stress related to the job, overcommitment and the lack of balance between the effort-reward model which are seen through the sleep disturbance (Söderström et al.,

2012). Another study accomplished by S. Linton (2004, as cited in Söderström et al., 2012) showed that not enough interaction in working environments increases the chances of having sleep difficulties for some time.

Another considerable research made by M. Söderström et al. (2012) emphasized on the fact that sleep less than 6 hours is a major factor for development of the burnout after the comparison with the demand of work, work-related thoughts in leisure time and quality of sleep in general.

It was also revealed that the investigation of the physiology of sleep along with burnout can show sleep fragmentation, not enough of efficient sleep and lower duration of some stages of sleep (Ekstedt et al., 2006).

The most important studies for the further development of this work are related to the role of sleep and sleep problems in the advancement of burnout. Some qualitative research of employees outlined sleep difficulties related to work were the major factors for the burnout and demonstrated that burnout employees with sleep problems showed higher scores on the level of exhaustion during 6 months and this exhaustion was a major problem for the process of falling asleep and having more refreshed sleep (Söderström et al., 2012). That shows that there are further perspectives on the way of exploration of the relationships of burnout and sleep problems which are planned to be conducted in this academic paper.

There was also research conducted to prove evidence on the correlation between burnout syndrome development and the presence of sleep problems which are the main causes of fatigue. It was shown that people with significant burnout level have worse sleep quality: according to R. de Keijzer (2018), 2 of 4 people with pre burnout symptoms demonstrated an advanced decrease regarding sleep quality and sleep duration as well.

Thus, there were already made some attempts to determine the main linkages between sleep and burnout. Also, some interrelationships between sleep problems and major symptoms and indicators of burnout were pointed out. However, there is a strong

need for further research in this field with the identification of the major impact of burnout and sleep and vice versa. This research also aimed to look for the best predicting factors of burnout searching among sleep characteristics together with work peculiarities and personality traits.

1.4. Theoretical model of research: sleep-burnout connections

The scope of theoretical sources regarding the burnout, job characteristics, sleep characteristics and personality traits shows that they are closely connected. Work and personality peculiarities are quite well-studied and proved to be both factors and to some extent predictors of burnout. For instance, job characteristics can be predictors of burnout as the primary idea of this phenomenon has a strong relation to the professional sphere of employees. People who were extensively involved in the communicational component of workers complained about the symptoms of emotional exhaustion. Personal traits can be predictors of burnout as making an impact on his or her occupational activity.

Although burnout is quite widely studied phenomenon, sleep characteristics are not that profoundly described in the context of burnout. Based on the results of existing research, it is reasonable to sum up that sleep deterioration is described as a sign for burnout syndrome development in different stages. However, the lack of studies is focused on the models where sleep characteristics can be analyzed for burnout identification and understanding its depth.

The main objective of this theoretical model is to distinguish the main predictors of burnout according to the theoretical overview of the literature and find out whether sleep can be one of them. Additionally, this research aimed to evaluate the role of those three groups of possible burnout predictors for identifying the strongest of them and basing on it to give recommendations to human resource sphere and organizational psychologists

concerning what aspects they need study first of all supposing the employee's burnout development.

Thus, the theoretical model of burnout predictors used in this research includes three groups of characteristics which are job, personality and sleep peculiarities (See Figure 1.1.). Those components of each group of predictors were delineated by various researches and combined here for their empirical study.

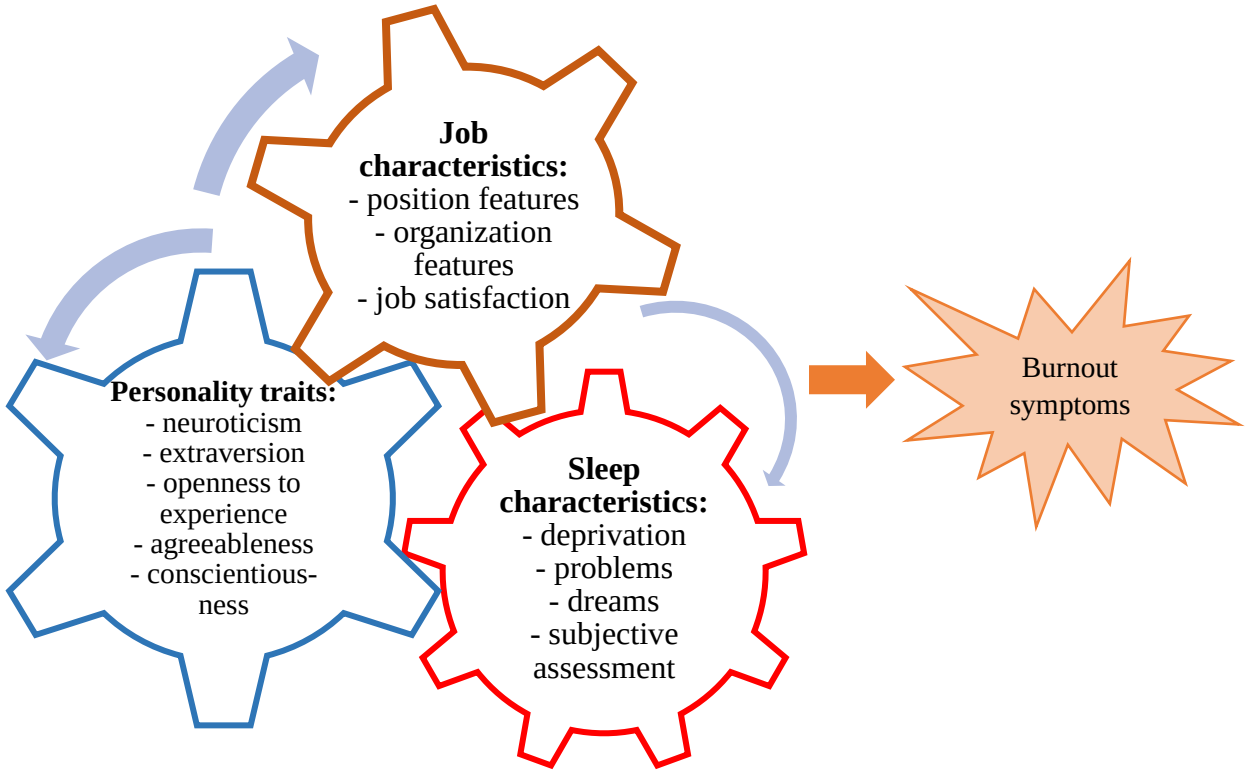


Figure 1.1. The theoretical model of burnout predictors

Although according to some previous researches, people-related professions are riskier in having burnout syndrome, the decision to focus not on the work sphere was made, due to the results of (Evans & Fischer, 1993; Yip & Rowlinson, 2009) stating that burnout may occur not only among employees working with people but it is quite possible even for technical or physical workers. In return, job characteristics considered in the model were divided into three additional aspects:

- organization characteristics (only one of which – the amount of workers an employee interacts with while working was considered),
- person's position characteristics (e.g. the position as being a chief or subordinate, the fact of being promoted at the last work place, the general work experience and the work experience at the current workplace, the concordance between education received and work performed, the combination of work and studies at the moment, the place of work (office or distantly),
- the job satisfaction (which can be considered the one between job and personality factors as a subjective measure).

Personality traits that are taken into account in this model are five personality factors that are proved to be correlated with stress experience and burnout (Chung & Harding, 2009). For example, people who have a higher level of neurotic traits are expected to suffer from burnout symptoms (Chutko & Kozina, 2013).

The sleep characteristics included in the model are supposed to be important regarding the prediction of burnout. The taken features where outlined based on different references. Sleep problems were indicated as a major predictor of burnout by S. Linton in 2004 and S. Melamed et al. in 1999 (Söderström et al., 2012). So it was reasonable to suggest that possibly, people who sleep enough have lower level of burnout. Also, sleep deprivation in the studies of J. Benington and C. Heller (1995) was a cause of high emotionless regarding different events and a propensity to stress. It was stated that people who experience sleep deprivation have less defense against the consequences of the situation caused by stress. That it is important to mitigate the negative influence of sleep deprivation by adding the right amount of sleep. In the empirical research, thus, participants gave information about the length of their sleep, time when they go to bed and wake up, time it takes them to fall asleep, the need of taking pills to fall asleep etc.

Also, dreams can be seen as emotional state indicators (according to Pryschepa & Efymenko, 2013), and, though, burnout markers. Not going into details about dream

content, participants were still asked whether they remember dreams or not and what is mainly their dreams' content general emotional background – positive or negative.

Additionally, besides sleep problems, sleep deprivation and dream features, subjective experiences of sleep were included in the model, namely, does a person feel restful after waking up and how does he/she assess the sleep quality.

It is also important to mention that those three groups of factors also have all-round interrelations. For example, M. Kuppermann with colleagues (1995) stated that people who satisfied with a job have fewer problems with sleep. The process of work-related thoughts can be a predictor of burnout as well M. Söderström et al. (2012) and Benediktsson (2019).

Although the theoretical model includes three groups of predictors, the main accent in this research was made on sleep characteristics as they are less studied. It was aimed to find out if these characteristics can be predictors for burnout, and what is their role in such prediction.

Conclusions to chapter I

Burnout is considered to be a process of incremental loss of 3 types of energy such as emotional, cognitive and physical, and may also occur on behavioural level. This phenomenon is significantly more expressed in the signs of emotional and mental exhaustion, physical tiredness, apathy, frustration, personal exclusion and decreased satisfaction with the working activity of an individual by oneself.

According to the literature analysis, emotional exhaustion is possible to be considered as one of the most considerable indicators of the burnout. This syndrome has a long history of its definition transformation with a broad examination of the main models. There were also highlighted additional symptoms of chronic tiredness, dysfunctions in the cognitive sphere and even some changes of the personality traits.

Mostly burnout is a job-related phenomenon which has a major impact on the personal efficiency and productivity of work. This syndrome can arise during the period of excessive professional activity, specifically, when a person is completely immersed in the working process and refuse to notice or forget his or her needs. To sum up, burnout is described as an important problem among employees of different fields and requires to be studied in details regarding its predictability.

Sleep is a complicated process of the human brain which is vital to our healthy cognitive functioning. That it is why the sleep characteristics can be a major indicator of problems related to the mental health of people, in particular, employees. There were researches conducted regarding the sleep quality sleep deprivation, sleep disturbance and the duration of sleep. It was found out that people with insufficient amount of sleep are more tended to stress, unhealthy emotional reactions on difficulties and, as a result, probably, are more likely to suffer from burnout and its symptoms.

CHAPTER II
ORGANIZATION AND RESULTS OF STUDYING THE INFLUENCE OF SLEEP CHARACTERISTICS ON THE BURNOUT OF EMPLOYEES

2.1. Characteristics of the study group

The study was conducted during the period of 2019-2020. The data collection phase lasted from January to April respectively.

The study involved exclusively employed participants in different spheres of occupation.

The data presented in this study was collected and analyzed in conformity with the age, gender, the level of education on the current period, personal confirmation of being employed, the job title and name of occupation.

There were 108 people who took part in the study according to (for more details see Appendix 1):

- age (people from 19 to 56 with the average age 31 and the most frequent age of 24 among the participants);
- gender (27% (29 people) of participants were men and 73% (79 people) women respectively);
- educational background (there were people of different educational levels who participated in the study). There was an overwhelming number of Master's Degree – 65 people (60% of all participants), the second one with the number of Post graduate studies (Ph. D) – 22 people (20% all participants), the third one of Bachelor's Degree - 16 people (15% all participants), the fourth one of complete secondary education – 4 people (4% all participants) and 1 person with vocational education (college, technical school, etc.);

There were also people with different occupational background. Most of the respondents are from the IT sphere (QA engineers, software developers, data scientists, software development designers, project managers and HR-managers) and university sector (17 lecturers and 4 assistants), managements (project assistance, public relations managers, sales managers etc.), governmental institutions (specialists, deputy directors), school staff (kindergartens, primary schools and high school), researchers and scientists in different fields (Ph. D and others), creative industries (event managers, designers etc.) and private business (individual entrepreneurs), project assistants (UNIDO etc.) and other professional fields (for more details see Appendix 1).

That is also important to emphasize on the importance of the work experience of respondents which is assessed in two different aspects, regarding the overall work experience and the work experience in the current position. The general work experience of each participant vary from the minimum value of 0 (which means that they work less than 1 year) to the maximum value of 35 years with average 9,5 years, and 4 years (11 people) as the most frequent number of general experience in different spheres. Also, work experience on the current position ranges from 0 to 35 years as well with average 4,3 years, and less of 1 year (25 people) as the most frequent number of experience in the related field.

69 people who work in accordance with the educational background and 39 of those who are employed in different fields regarding the professional education received. Among those people are 26 respondents who are combining their work with obtaining education.

Regarding the place of work, 80 people work in office and 27 work distantly (the period of quarantine was not taken into account). Also, an important criterion to clarify was self-employment or owner of business and company- or institutional-employment which is 15 and 92 respectively.

Another interesting information about the hierarchy of the employed people and a capacity of company was obtained. There were 78 of subordinates and 30 supervisors took part in the study where most people work in the company with more than 100 employees. Also 59 people did not experience any significant changes regarding their work positions when, on the contrary, 47 were promoted (for details see Appendix 1).

Another amount of data received from the study concern the aspect of sleep. That is important to underline that there were 14 questions offered to answer for participants and the following information received (based on the PSQI, slightly modified for the needs of this research).

There was significant information regarding the time of going to bed obtained from the survey. According to that information the vast majority of respondents go to bed between 11 p.m. and 1 a.m. (for details see Appendix 1).

The highest score regarding the burnout is 125 and the lowest is 28 with the average level of burnout among the respondents of 65.

Mostly people need from 15 to 20 minutes to fall asleep where the minimum amount of time is 1 minute and maximum amount of time is 60 minutes. Also, most people in average sleep for 7 hours with the maximum amount of sleep of 10 hours and minimum amount of 5 hours.

There was the general classification of sleep problems with the range from 0 to the highest point among respondents regarding the difficulties of falling asleep, waking up during the night or early in the morning, breathing difficulties, cough or snoring, feeling of cold, feeling of heat, bad dreams and painful feelings. The maximum value of sleep problems indicated in the survey is 19 and the minimum value is 0 which means that people with higher marks are suffering from sleep problems and with lower marks are tended to have a good sleep. The average score for the sleep problems criteria is 7. Also, 52 respondents had a feeling of tiredness after they woke up and 56 indicated that they rested well after they woke up.

2.2. Characteristics of the research methods

During the process of undertaking the study, different psychological and statistical methods were used. There is a description of main methods provided below.

The self-assessed inventory of subclinical burnout (V. Dudiak).

This questionnaire, developed by Ukrainian Researcher V. Dudiak (2007), includes 28 statements that need to be rated using 5-point Likert scale. It is possible to distinguish 4 main aspects of burnout on a subclinical level as behavioral (that is measured by respondents rates of such statements as “Frequent lateness”, “Postponement of work-related meetings” etc.), affective (“Increased irritability”, “Powerlessness, emotional exhaustion” etc.), cognitive (“Poor concentration, distraction”, “Cynical attitude towards colleagues and other partners” etc.) and physiological (“Sleep disorders (insomnia / sleepiness)”, “Rapid physical fatigue” etc.), and a total score of burnout (See Appendix 3). The Cronbach’s alpha coefficients were accounted for each measure of burnout and for integrative scale, all are satisfactory and this gives a reason to conclude the internal consistency of the scales (behavioral 0.83; affective 0.89; cognitive 0.80; physiological 0.86).

Author’s inventory based on the Pittsburgh Sleep Quality Index

For the evaluation of sleep quality and related sleep problems, some questions from the Pittsburgh Sleep Quality Index (PSQI) (Smyth, 2012) were used. Respondents were offered to indicate their answers for different questions in order to identify the quality of sleep.

This PSQI is used mainly to gauge the sleep quality and sleep composition. There are indicated the following issues which are measured by PSQI: subjective quality of sleep, delayed sleep, duration of sleep, sleep efficiency, causes of sleep disturbance, usage of sleep medication, daytime dysfunction (Smyth, 2012). The daytime difficulties are measured for a previous couple of months. Respondents were offered to indicate their

answers to different questions to identify the quality of sleep. System of scores has a range from 0 to 3 to the scale (3 indicate the negative extreme regarding the Likert Scale) and the sum of all scales is 0-21 (Smyth, 2012). The Cronbach' alpha of the PSQI is 0,83 for all components (Buysse et al., 1989).

The Ukrainian translation from the Russian version of the PSQI was used in this research.

It originally consists of 11 self-rated questions (Semenova & Danilenko, 2010). It was slightly modified, namely, the questions regarding difficulties with staying awake when driving, eating or social gathering and the possibility of being enthusiastic regarding the getting things done, were deleted, and the questions concerning the feeling of being restful after waking up, the general emotional state after waking up, the remembrance and emotional background of dreams were added (See Appendix 4). As there were different types of scales in the new-created inventory, it was impossible to get the general Cronbach's alpha coefficient, but it was received for "sleep problems" scale and it was satisfactory (0.76).

Thus, the following characteristics of sleep were taken into consideration:

- the time when person is going to sleep;
- the time of waking up;
- the number of hours a person sleeps;
- the time that is usually needed to fall asleep after going to bed;
- the feeling after waking up (tired or rested);
- the influence of the events during the time on the sleep quality;
- the presence of different sleep problems (according to the PSQI);
- the personal subjectively assessed quality of sleep;
- the consuming of sleep medication;
- the presence of a roommate or sleep partner;
- the memories about dreams.

Job Satisfaction Questionnaire (JSS, P. E. Spector).

This questionnaire is established to identify the working attitude of employees within 9 categories which belongs to the general perception of employee job satisfaction (Spector, 1985). It consists of 36 statements which should be rated from 6 as the highest level of job satisfaction to the lowest level of 1. Also, these questions are divided into 9 subscales which refer to the aspects of work that people may be satisfied with (Marych, 2019):

1. Salary outlines – the level of satisfaction of an employee with his or her salary, its fairness and the level of satisfaction with the prospect of its increase.
2. Career opportunities which reflects the possible career prospects with the level of the comprehensibility of terms and rules on the way of achieving those opportunities for employees.
3. Leadership which determines how well the employees are satisfied with their management, the level of competency of those managers and the general influence of their relationship on the amount and quality of work which is accomplished.
4. Colleagues at work – Identifies the level of satisfaction with colleagues and their relationship on the work place.
5. Extra benefits are determined to identify the presence of particular additional except salaries. It can involve social packages, additional package of services and material rewards which a certain organization can offers and its value and competitiveness compared regarding other institutions for employees.
6. Motivation system that delineates and determines satisfaction with the availability and combination of the motivational aspect which includes a set of specific actions and even rewards. Those things are usually used by institutions on the way of rewarding an employee for accomplishing and achieving its ultimate goals. It can be seen as an additional recognition for the conducted work. This scale also demonstrates the

quality of the motivational system in the company and the level of personal feelings of employees towards the acknowledgement of their accomplishments.

7. Work nature shows the meaningfulness and inspiration of the work which employees are doing.

8. Operating processes that define the level of organization of processes in the institution from the view of employees. It includes the clarity and explanation of working rules and procedures.

9. Communications assesses – the major processes of communication in the framework of the organization, its goals and objectives which should be clear to employees. The overall score of job satisfaction can be calculated by adding all the scores on 36 statements and can range from 36 to 216.

The Ukrainian version of the questionnaire was used. Cronbach's alpha coefficient for an integrative scale is 0.83 in this research.

The Big Five Locator (P. Costa, R. McCrae).

This methodology is developed for the diagnosis of five fundamental factors of personality: extraversion, neuroticism, openness to experience, conscientiousness, and agreeableness (McCrae, R. & Costa, P., 2007).

The retest reliability regarding the Ukrainian adaptation (Burlachuk & Korolev, 2000) which was used in the questionnaire is expressed as a correlation coefficient between two consecutive tests with an interval of two weeks. According to the neurotic factor it is 0.80; extraversion 0.87; openness to experience 0.77; agreeableness 0.87; conscientiousness 0.78 ($n = 30$, $p = 0.001$) (Burlachuk & Korolev, 2000). In this research, the following Cronbach's alphas were received: neuroticism 0.66; extraversion 0.82; openness to experience 0.73; agreeableness 0.69; conscientiousness 0.68.

This questionnaire has 25 scales. Each one is represented as a numerical bipolar 5-score scale, which has poles of contradictory personal characteristics. It hasn't inverted

scales. There is a description of 5 factors regarding the methodology (Burlachuk & Korolev, 2000):

1. Neuroticism has 2 poles. To the first pole belongs people with the reactive personality and the second pole is characterized with people who are more likely to experience a rational and calm attitude to life.

2. Extraversion also has 2 poles. To the first one belongs extraverts who are more communicative, active and impulsive and to the second - introverts who are independent and.

3. Openness to experience has 2 poles as well. The first one belongs to people who have lots of interests, original ideas and craving for novelty and the other side of pole is full of people who are closed for new experience.

4. Agreeableness (altruism). On the one side of this factor are conformists who can compel personal needs to the needs of group and on the opposite type is a person who challenge others and environment.

5. Conscientiousness has also 2 poles. The first pole can be described as high self-possession, steadfastness, responsibility and goal-oriented attitude. Another pole is presented by the volatile person who can be easily distracted, not organized and not focused on the final goals.

Statistical methods

The primary data obtained from the survey were placed into a spreadsheet of the statistical program Statistica 8.0 which processed it with the help of quantitative methods as comparative, cluster and regression analysis. Cluster analysis was used to determine people with the different levels of burnout, and the comparative analysis – to identify the peculiarities of those groups of people who higher and lower burnout The regression analysis for building the predictive models was used in order to define the possibilities of sleep characteristics to predict the burnout and compare this possibility of personal and job characteristics' to be burnout predictors.

2.3. Results of the research regarding the sleep as a predictor of burnout

This section addresses to the results of the study on the possibility of sleep and its characteristics to predict the employees' burnout (a subclinical level). According to the literature, there are additional factors possibly predicting the burnout, such as general job characteristics, job satisfaction, factors of personality along. Thus, due to the hypotheses formulated at the beginning, and the information received from the theoretical analysis, firstly people with different burnout levels were defined, according to their self-assessed state, then their sleep, personality and work peculiarities were analyzed, and finally regression models of those three groups of factors separately and of all factors together were built for defining the best one for burnout prediction.

The received results provided an opportunity to identify significant characteristic of sleep and its impact on the burnout. Based on the results, several practical recommendations for assistance to people with burnout were developed to facilitate the human resource management sphere of occupation.

2.3.1. Work and personality features of people with different burnout levels

At the very beginning, the first hypothesis, stressing on the possibility that the employees scoring high for burnout, differ by their sleep characteristics from those who have no sighs for being burned-out at work, was checked. This hypothesis appeared as a preliminary presumption as different researchers consider sleep problems being both a factor according to J. Nilsson and colleagues (Nilsson et al., 2005, as cited in Söderström et al., 2012) and M. Sonnenschein and colleagues (Sonnenschein et al., 2008, as cited in Söderström et al., 2012) or a symptom according to S. Melamed and colleagues (Melamed et al., 1999, as cited in Söderström et al., 2012) and A. Vela-Bueno and colleagues (Vela-

Bueno et al., 2008, as cited in Söderström et al., 2012) of the burnout, and it is quite difficult to define what was the first to appear.

For reaching this aim, a cluster analysis was conducted based on the 4 burnout aspects assessed by the V. Dudiak's inventory (behavioral, affective, cognitive and physiological). On the first stage, the dendrogram was built and the decision of dividing group members into three clusters was made. According to the K-means clustering procedure, it was stated that this was a good decision as those 3 clusters significantly differentiate from each other for each aspect ($p<0,05$ and they are totally different groups regarding this indicator. Analyzing the graph (See Figure 2.1.), the whole range of respondents were divided into 3 groups regarding the level of burnout. According to the graph, it can be also seen that if a person is dealing with the emotional burnout, it is visible that all 4 factors are affected (behavioral, affective, cognitive and physiological). This also proves that the general summarized scale of burnout is appropriate to use in the regression analysis as metric scale.

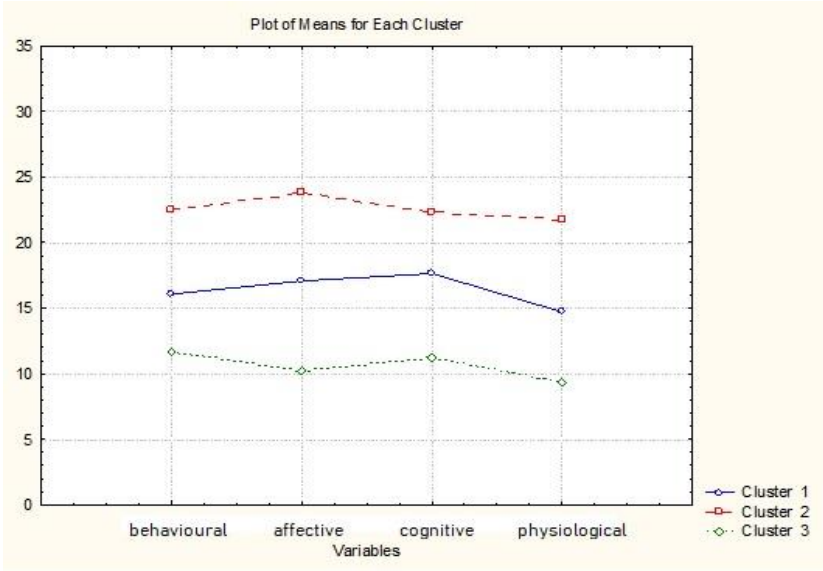


Figure 2.1. The groups regarding the level of emotional burnout

That is why this cluster analysis is important because it provides us with opportunity to distinguish 3 major groups among employees who took part in the questionnaire according to the level of burnout.

The Cluster number 2 includes people (31 member) with the high level of burnout which is 29% among 108 people in general. The Cluster number 1 are people (44 members) with the medium level of burnout (41% of a general group). The Cluster number 3 consists of 33 people with the low level of burnout (30% of all respondents) (See Figure 2.2.).

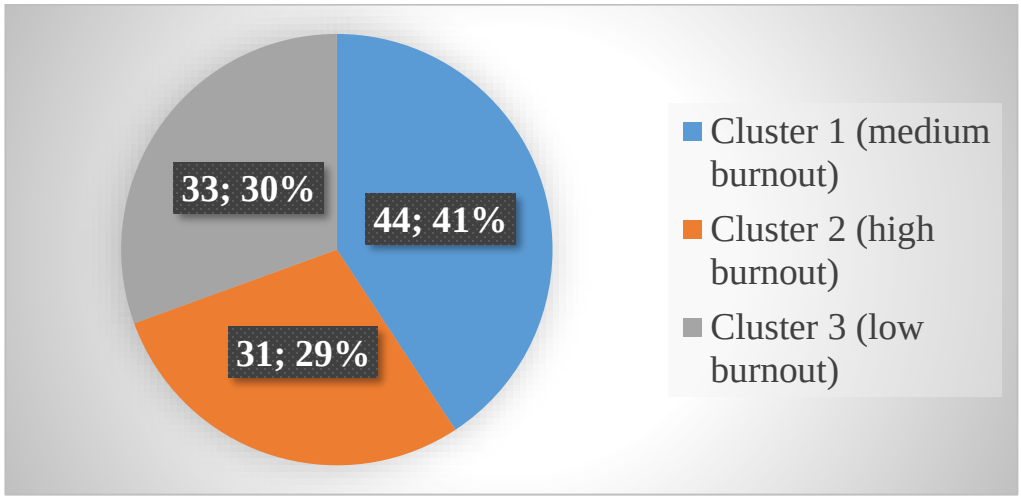


Figure 2.2. Clusters of the level of burnout among participants (total = 108)

Using criteria of comparative analysis (One-way ANOVA and Crosstabulation tests), those three groups of employees were compared for some of their sleep and personality characteristics. Unless there were found no significant differences in the time when the members of these three clusters go to bed and wake up, as well as in the longevity of their falling asleep and sleeping during the night, there still remain some expressive differences in their sleep which probably reflect their level of being burned-out. Indeed, different numbers of sleep disturbances and a subjective assessment of the sleep quality were stated by people of those groups, and these differences tend to be statistically

significant (p<0,05) (See Appendix 2). Namely, those who have the highest level of burnout, tend to mention having sleep problems during last 2-3 months (like problems with falling asleep for more than 30 minutes, waking up in the middle of the night and being unable to fall asleep again, having troubled breathing, feeling hot, cold, pain etc.) much more often, than people of other two clusters and evaluate their sleep quality at the lowest rate, comparing to other two clusters (See Figure 2.3.).

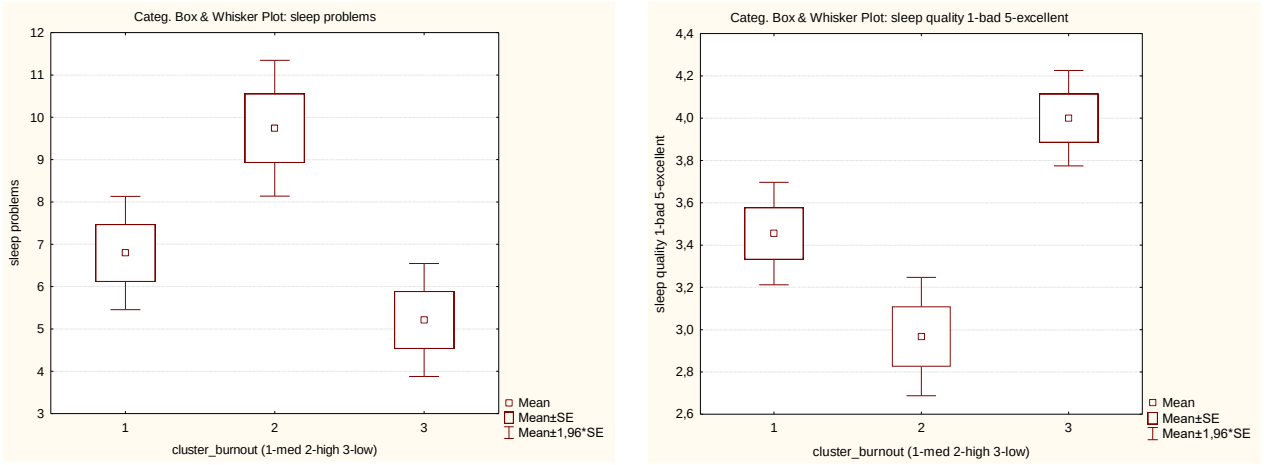


Figure 2.3. Differences of sleep characteristics (amount of sleep problems – left, subjective sleep quality – right) among employees with medium (1), high (2) and low (3) sighs of burnout

On the results of Crosstabulation test, it can be also concluded that those who score high in burnout usually feel tired even after sleeping for all night long, comparing to those who have low rates of burnout (See Table 2.1.). It is also notably, that those who have medium rates of burnout are divided evenly, according to this measure. Maybe, feeling unrested after sleep can be one of the first signs for moving to heavier burnout. If it is though, this finding can be important for practical usage.

Table 2.1. Results of Crosstabulation test: differences in feelings after sleep of employees with different burnout levels (Pearson Chi-Square=18,07, p<0,05)

cluster_burnout (1-med 2-high 3-low)	2-Way Summary Table: Observed Frequencies (results_eng) Marked cells have counts > 10		
	feels after sleep: 0-tired 1 -rested 0	**feels after sleep:0-tired1 -rested 1**	Row Totals
1	22	22	44
2	23	8	31
3	7	26	33
Totals	52	56	108

Some of the work peculiarities were also compared among members of the clusters, however, no significant differences were found. People with high tendency to burnout do not vary much from the others in cases of working due to their educational background or not, combining work and studies or only working, working in the office or distantly, being a business owner or employee, having big or small work experience, working in a big or tiny company. All those factors seem to be not as important for developing a burnout syndrome, as sleep characteristics appeared to be.

The only one meaningful work characteristic found to be important for burnout level differentiation is job satisfaction. People who score high in burnout are much less satisfied with their job, and this is true for all job aspects and the integrative measure (See Figure 2.4., Appendix 2). Job satisfaction, however, is a subjective parameter, not a characteristic of work itself, thus, probably, some personality aspects moderate the role of work characteristics in burnout, and it was reasonable to look for personality differences of employees within three clusters. What was found out is that those with the highest rates of burnout score higher in conscientiousness and lower in neuroticism than others do (See Figure 2.5.). So mainly those people who are more satisfied with their job are less likely to experience burnout phenomenon.

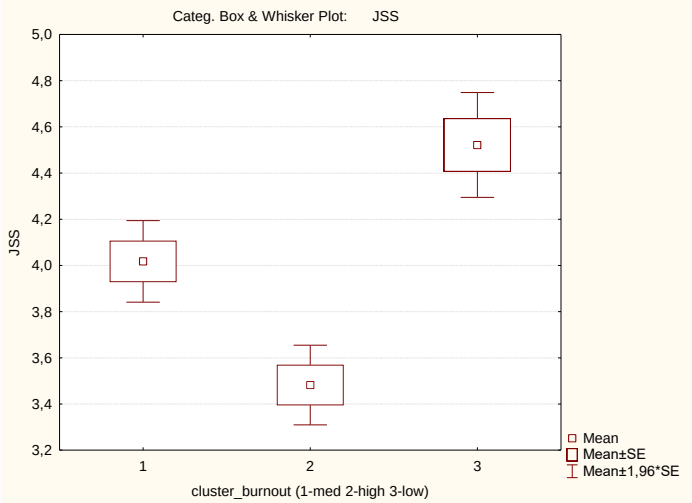
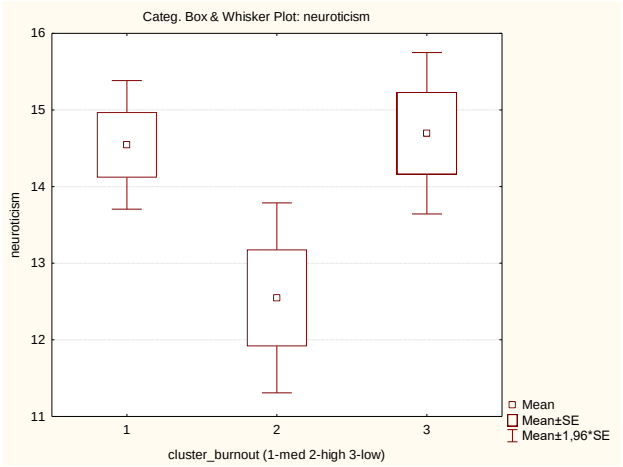


Figure 2.4. Differences of job satisfaction among employees with medium (1), high (2) and low (3) sighs of burnout



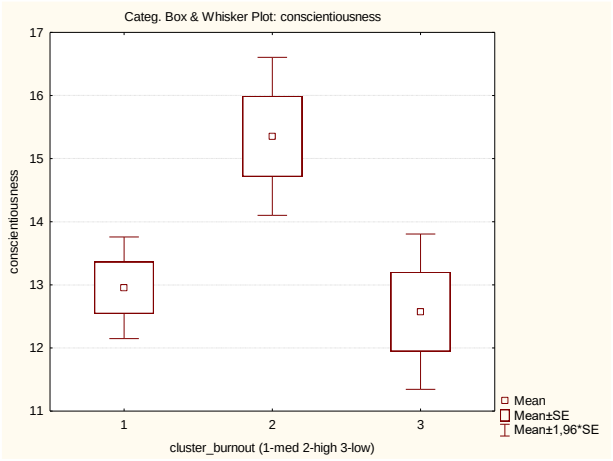


Figure 2.5. Differences of neuroticism (left) and conscientiousness (right) among employees with medium (1), high (2) and low (3) sighs of burnout

To conclude, job satisfaction characteristics differ among the groups of employees according to their level of burnout. The higher is the level of burnout, the higher is the indicator of job dissatisfaction. Also, people with neurotic personality in this research tend to burnout less, than those do not possess this feature of character. Consciousness play an important role in the comparison among groups of employees.

2.3.2. Sleep, work or personality factors – which are stronger predictors for burnout?

Thus, it was shown that sleep characteristics are closely connected to burnout symptoms, and our results coordinate well with the findings of researchers around the world such as J. Nilsson et al. (2005, as cited in Söderström et al., 2012), S. Sonnenschein et al. (2008, as cited in Söderström et al., 2012) and A. Benediktsson (2019). It is quite reasonable to conclude that employees who score high for subclinical burnout signs have problems with sleep that mainly, however, refer to subjectively assessed difficulties like feeling of tiredness after sleep, low-rated sleep quality etc. Based on the statements that the lack sleep can result our reactiveness to emotional and stressful situations M. Vandekerckhove, R. Cluydts (2010, as cited in Söderström et al., 2012), provoke feelings of fatigue and cognitive dysfunction J. Nilsson et al., (2005, as cited in Söderström et al., 2012), a second hypothesis was created, supposing that sleep characteristics can be good predictors for burnout, even better than work features. Using a multiple linear regression method, it was made an attempt to empirically explore the influence of particular characteristics of sleep on the probability of being the predictors of burnout among employees.

In order to obtain corresponding results, the general level of emotional burnout was chosen as a dependent variable (after summarizing the scores of subclinical burnout symptoms received after self-assessed inventory by V. Dudiak (2007) was filled by respondents).

After the careful consideration of the regression analysis results with the forward stepwise method, it is possible to affirm that nearly 28% (R^2= 0,28253) of variance of the subclinical burnout score can be explained by the characteristics of sleep. This model is approved in accordance with the F (4,103) =10,140 which is used to check a hypothesis. The F-criteria of this model with the level of validity p<0,05prove the significance of this

model (See Table 2.2.). In conclusion, 28% of values regarding the general scale of emotional burnout can be described, predicted and explained with the characteristics of sleep.

Table 2.2. The regression model of the sleep characteristics

N=108	Regression Summary for Dependent Variable: gen_burnout (results_eng) R= ,53153325 R?= ,28252759 Adjusted R?= ,25466459 F(4,103)=10,140 p<,00000 Std.Error of estimate: 17,317 **Beta**	Std.Err. of Beta	B	Std.Err. of B	t(103)	p-level
Intercept			77,65255	9,357917	8,29806	0,000000
sleep quality 1-bad 5-excellent	-0,205929	0,103342	-4,80827	2,412955	-1,99269	0,048941
sleep problems	0,223627	0,093486	0,96117	0,401810	2,39209	0,018566
sleep pills **0-no 1-yes**	0,169738	0,087588	9,79910	5,056550	1,93790	0,055373
feels after sleep: 0-tired 1-rested	-0,170062	0,098773	-6,79524	3,946736	-1,72174	0,088119

The further detailed analyses demonstrated that there was a list of scales which showed the major impact on the burnout of respondents and had an important role in the general regression model: employee's subjective evaluation of sleep quality, the presence of sleep problems, taking sleep medication and feelings after waking up.

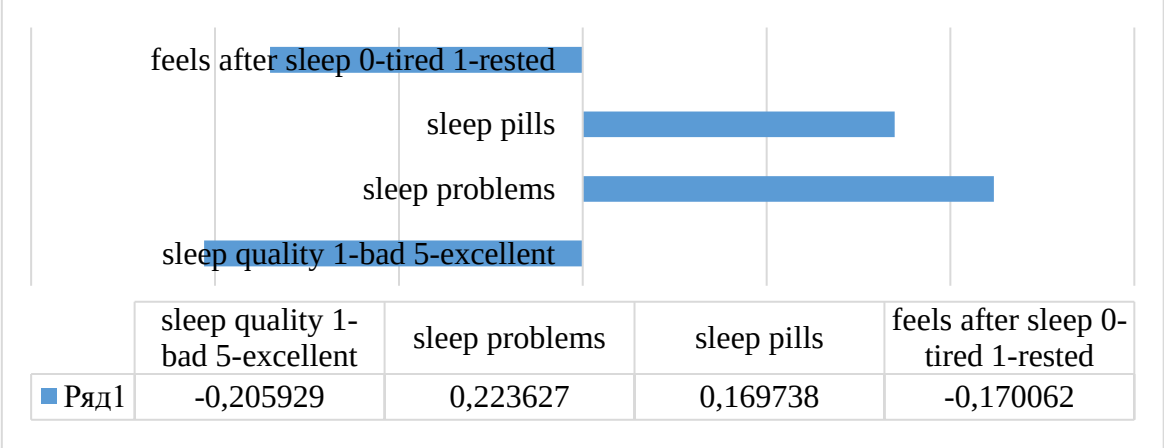
It is important to emphasize that for the more efficient analysis there was used a stepwise regression to clearly identify the step-by-step significance of each characteristic and the level of its effect. There are 4 major scales that play an important role in the emotional burnout forecast according to a regression analysis.

The most significant value regarding the possibility to predict burnout has a sleep quality scale with the 16,62% (R^2 change=0,166245). The other one which can be used as a forecast for the phenomenon is the sleep problems scale with 5,65% (R^2 change=0,056522). Sleep pills scale and feels after sleep predicts burnout with the 3, 91% (R^2 change=0,03911) and 2, 06% (R^2 change=0,020649) respectively.

Subjective assessment of the sleep quality has a major impact on the emotional burnout (its F to remove statistic is the biggest, F=21,14, p=0,000012) and, what is more important, can be a predictor of this phenomenon among employees. The presence of sleep problems is one more significant (p=0,02) predictor of burnout scale variance

(Beta=0,22). This scale consists of the general questions regarding the sleep deprivation during the sleep, examples of feeling during the sleeping time (waking up in the middle of the night, painful feelings, health issues, breathing, bad dreams, cold or hot feeling in the body etc.). Taking sleep medication scale is also significant in this model (p=0,02). The fact a person needs such medicine gives a reason to suppose sleep difficulties among employees which they are trying to solve This model also gives a reason to declare that the person's feelings of tiredness after waking up are one more sleep characteristic possible to predict an emotional burnout (Beta=-0,17) (See Figure 2.6.).

The listed sleep values are subjective and, thus, easy to be received from employees by a simple inventory or in a short interview, so it can be used for the evaluation of the symptoms of burnout. Those data also are important because they prove that particular sleep characteristics can be predictors of burnout.



	sleep quality 1-bad 5-excellent	sleep problems	sleep pills	feels after sleep 0-tired 1-rested
Ряд1	-0,205929	0,223627	0,169738	-0,170062

Figure 2.6. The value of Beta coefficient

Afterwards, there was conducted a linear regression analysis regarding the influence of characteristics of job on the subclinical burnout signs of employees. Unless it is quite widely studied and proved job characteristics to be significant predictor of burnout, in this research the regression model of work peculiarities was built for

comparison with the sleep characteristics model to test the hypothesis that the second one is more predictable.

This study was established using the prepared detailed questionnaire and a Job Satisfaction Scale by P. Spector. The following predictors were included into the preliminary model:

- work according to the preliminary education;
- combination of work and learning;
- place of work (office or remotely);
- the type of employment (hired or owner);
- the volume of the company (to 10, 10-50, 50-100 and more than 100 employees);
- job position (subordinate or supervisor);
- total work experience;
- total work experience of current job position;
- change of position (no or promotion).

Later, a model including job satisfaction was tested.

If we only put “objective” work characteristics in the model, it is significant ($F(4,103) = 5,69$, $p<0,05$) but able to explain only 18% of burnout scale variance (See Table 2.3.). The best predictors of burnout here are 4 characteristics. Namely, the strongest one is whether a person has had a position change (meaning going to a higher position while working at the current workplace). What can be somewhat strange is that the model shows that higher in burnout score those employees who had been promoted than those whose position was not changed (Beta=0,28). The second predictor is a general work experience – the higher it is, the closer to burnout the person is (Beta=0,27). Those who combine work and studies are more likely to be more fragile, probably, that leads to their higher burnout scores (Beta=0,20). Finally, this model includes the company size: the employees of huge companies show higher scores of burnout than those who work for small organizations (Beta=0,13).

Summarizing this result, it may seem obvious, that the listed work characteristics are comparably much weaker in their predictive abilities than sleep factors.

Table 2.3. The regression analysis regarding job characteristics

N=108	Regression Summary for Dependent Variable: gen_burnout (Spr R= ,42537904 R?= ,18094732 Adjusted R?= ,14913945 F(4,103)=5,6888 p<,00035 Std.Error of estimate: 18,502					
	Beta	Std.Err. of Beta	B	Std.Err. of B	t(103)	p-level
Intercept			51,95376	5,040363	10,30754	0,000000
position change **0-no 1-promotion**	0,283066	0,089660	0,41660	0,131956	3,15710	0,002091
Work experience GEN	0,271763	0,090507	0,99264	0,330586	3,00266	0,003359
Work and study combine **0-no 1-yes**	0,204314	0,090854	9,54113	4,242729	2,24882	0,026653
Company size **1-less 10, 2- 10-50, 3- 50-100, 4-100+**	0,128495	0,089905	2,11931	1,482836	1,42923	0,155964

It is crucial to highlight, however, that if job satisfaction is included into the model, it changes dramatically (See Table 3.4., 3.5.). According to result of this regression model, it includes 4 characteristics of work and job satisfaction which have a significant impact on the burnout among employees. However, the R- can explain almost 48% of the burnout scale variance. The F-criteria (F (5,102) = 18,978) of this model with the level of validity p<,00000 prove the significance of this model (See Table 2.4.).

According to the regressive analysis model, it is worth to conclude that there are relations with the job satisfaction along with the characteristics of work and the possibility to predict burnout even better that sleep factors do.

The overall indicator of job satisfaction as stated P. Spector (1985) (being satisfied by pay, promotion, supervision, fringe and benefits, contingent rewards, operating conditions, coworkers, nature of work and communication) in general can be a major predictor of burnout among employees (See Table 2.5.).

Table 2.4. The regression model of job characteristics including job satisfaction regarding the burnout

N=108	Regression Summary for Dependent Variable: gen_burnout R= ,69421849 R?= ,48193931 Adjusted R?= ,45654418 F(5,102)=18,978 p<,00000 Std.Error of estimate: 14,787					
	Beta	Std.Err. of Beta	B	Std.Err. of B	t(102)	p-level
Intercept			134,0292	10,01345	13,38491	0,000000
job satisfaction	-0,614120	0,077706	-17,3398	2,19403	-7,90315	0,000000
Work and study combine **0-no 1-yes**	0,191083	0,072465	8,9232	3,38398	2,63691	0,009675
work-education backgraound **0-no 1-yes**	-0,130161	0,073551	-5,4103	3,05721	-1,76967	0,079770
Work experience CURRENT	0,136521	0,074551	0,4987	0,27231	1,83123	0,069986
position change **0-no 1-promotion**	0,133073	0,074236	0,1958	0,10926	1,79256	0,076007

Table 2.5 The stepwise regression analysis regarding job characteristics including job satisfaction

Variable	Summary of Stepwise Regression; DV: загальнеEB (Spreadsheet1_(Recov						
	Step +in/-out	Multiple R	Multiple R-square	R-square change	F - to entr/rem	p-level	Variables included
JSS	1	0,635295	0,403599	0,403599	71,73290	0,000000	1
Work and study combine **No-0 Yes-1**	2	0,658129	0,433134	0,029534	5,47059	0,021232	2
work-education background **No-0 Yes-1**	3	0,672404	0,452127	0,018994	3,60548	0,060361	3
Work experience CURRENT	4	0,682363	0,465619	0,013492	2,60046	0,109893	4
position change 0-no 1-promotion	5	0,694218	0,481939	0,016320	3,21328	0,076007	5

Another category of the job characteristics showed that people who combine work and studying at the university are more likely to experience burnout, as it was in the previously described model. Its predictive abilities are much weaker (Beta=0,19), although this factor stays significant in the model ($p<0,05$).

The longer a person works at the current workplace, the bigger risk of burnout symptoms appear, according to the model (Beta=0,14 for this factor). Two more predictors in this model are those if a person work corresponds to the education received and if any promotion of the job position was reached. In these cases, burnout is more possible if the employees work responsibilities include something different from what he was trained for in the high school (Beta=-0,13) and, as described in the model above, when the position was changed (Beta=0,13) (See Table 2.4.).

At the third stage or multiple linear regression analysis, the five-factor model for burnout prediction was tested. It included only five personality locations which were

widely described as strong predictors of burnout (e.g. Orel, 2005, as cited in Koltunovych, 2016; Chutko& Kozina, 2013; Lisova & Pavlynska, 2016).

The results showed that there are particularly 3 major traits as conscientiousness, neuroticism and openness to experience which correlates with the general level of burnout The model is significant and can explain almost 19% (R^2 = 0,1895) of burnout scale variance (F(3,104)=8,1075, p<0,05 (See Table 2.6.).

Table 2.6. The regression analysis of the personal traits regarding the burnout

N=108	Regression Summary for Dependent Variable: gen_burnout R= ,43536503 R?= ,18954271 Adjusted R?= ,16616413 F(3,104)=8,1075 p<,00007 Std.Error of estimate: 18,316					
	Beta	Std.Err. of Beta	B	Std.Err. of B	t(104)	p-level
Intercept			69,85770	11,61818	6,01279	0,000000
conscientiousness	0,364972	0,100627	2,13086	0,58750	3,62699	0,000446
neuroticism	-0,282555	0,089137	-1,75336	0,55313	-3,16988	0,002004
openness to experience	-0,124782	0,101358	-0,67296	0,54664	-1,23110	0,221061

According to the model, the higher is the level of conscientiousness, the more tended a person is to burnout (Beta=0,36). On the contrary, the more person is emotionally unstable, the lower is the risk of burnout (Beta=-0,28). Also the more people are opened to a new experience, the less tended they are to burnout (Beta=-0,12).

2.3.3. The prediction model of all factors – sleep, work peculiarities, and personality traits

All models described above, although being significant, could not explain much of burnout scores distribution. Thus, none of them could be interpreted as well-predictable. In this section the general regression model including all groups of factors – characteristics of sleep, work and personality traits, will be described.

The following results demonstrated that using this regression model it is possible to explain almost 62% (R^2=0,62) of burnout scale variance. The model is statistically significant (F (9,98) = 18,087, p<0,05 (See Table 2.7.).

Table 2.7. The regression model of all groups of burnout factors

	Regression Summary for Dependent Variable: загальнеEB (Spre R= ,79006534 R?= ,62420324 Adjusted R?= ,58969129 F(9,98)=18,087 p<,00000 Std.Error of estimate: 12,848					
N=108	Beta	Std.Err. of Beta	B	Std.Err. of B	t(98)	p-level
Intercept			113,0881	12,75054	8,86928	0,000000
JSS	-0,444072	0,069689	-12,5384	1,96768	-6,37220	0,000000
feels after sleep 0-tired, 1-rested	-0,109210	0,075983	-4,3638	3,03610	-1,43730	0,153819
conscientiousness	0,210593	0,064182	1,2295	0,37472	3,28118	0,001433
sleep problems	0,117857	0,071403	0,5066	0,30690	1,65058	0,102025
sleep pills 0-no, 1-yes	0,165961	0,066841	9,5811	3,85879	2,48293	0,014730
Work experience CURRENT	0,151915	0,065787	0,5549	0,24029	2,30920	0,023032
sleep quality 1-bad, 5-excellent	-0,150883	0,079220	-3,5230	1,84971	-1,90462	0,059761
neuroticism	-0,077762	0,066765	-0,4825	0,41431	-1,16470	0,246967
position change 0-no 1-promotion	0,075370	0,064804	0,1109	0,09538	1,16304	0,247639

It means that using such characteristics as information about promotion of employees, the level of neuroticism, conscientiousness, total work experience of actual work positions, job satisfaction can be used in the employees' assessment of burnout symptoms. It is also important to indicate that such sleep characteristics as subjective assessment of sleep, consuming sleep, sleep problems and feeling after waking up have a major influence on burnout and can be taken into account by certain professional as predictors of burnout.

The model consists mostly of significant variable in the past models and has the big influence on the overall indicator of burnout. (See Figure 2.7.).

The most significant role in this model is assigned to a job satisfaction (40,36%). This scale includes such variables according to P. Spector (1985) as payment, promotion, supervision, fringe benefits, contingent rewards, operating conditions coworkers, nature

of work and communication. The lower is job satisfaction, the higher is the level of burnout.

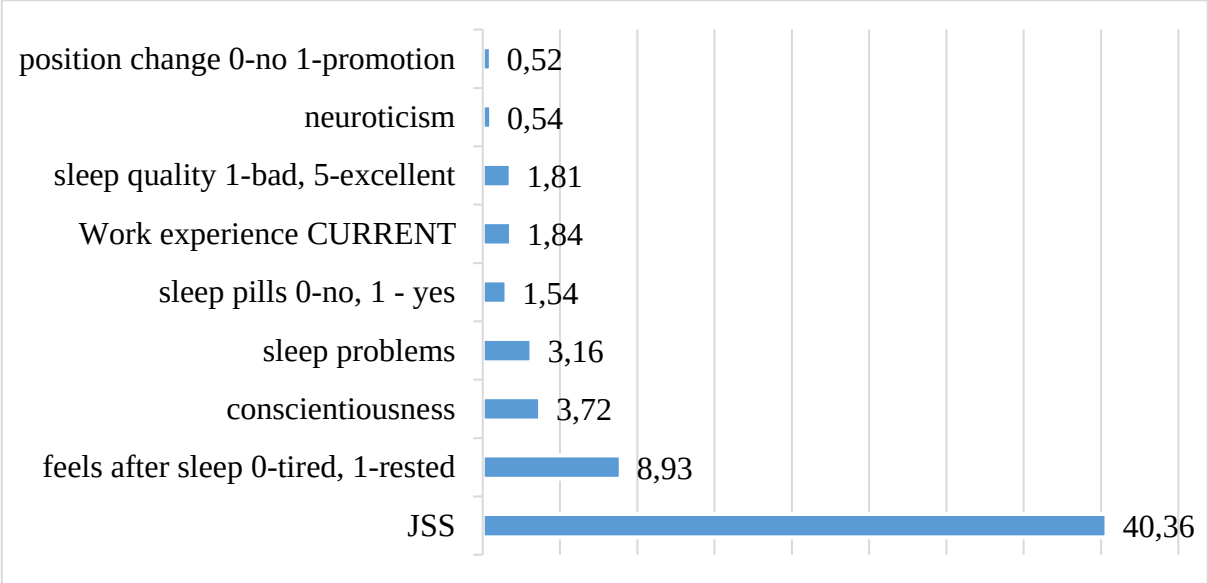


Figure 2.7. The share of significant indicators according to its influence on burnout (total=62,42%)

According to the model (See Table 2.7.), the lower is level of job satisfaction, the higher is the level of burnout (Beta= -0,44). Also, those who feel tired after sleep, comparing to those who feel rested, are more likely they are dealing with some symptoms of burnout (Beta=-0,11). The higher is the level of conscientiousness, the more tended a person is to burnout (Beta=0,21). On the contrary, the more person is emotionally unstable, the lower is the risk of burnout (Beta=-0,07). People who have sleep problems are more likely to suffer from burnout (Beta=0,12) along with those who take sleep medication (Beta=0,17). The lower people assess their sleep quality, the higher are chances that they have burnout (Beta=-0,15). It is interesting to point out, that the more years of employment people have, the more tended they are to burnout (Beta=0,15). And finally, those were promoted can also be influenced by the burnout symptoms, comparing to those whose position stayed unchanged (Beta=0,07).

It is obvious that the biggest part of the burnout scale variance is explained by job satisfaction in the described model. However, if the job satisfaction was excluded from the overall model, it still is stronger in prediction than the models of single factors described above, having a coefficient of regression analysis R^2= 0,46 (F-criteria F (7,100) =12,362, p<0,05 prove the significance of this model (See Table 2.8.).

The received model shows that if job satisfaction is not taken into account, the role of subjectively assessed sleep quality becomes one of the the strongest part of the prediction model (Beta=-0,23). The role of other sleep characteristics like taking pills for sleep (Beta=0,23) and having sleep problems (Beta=0,19) are also significant predictors of burnout. It is fairly to admit, however, that the strongest (not much, but still) multiple correlations are between burnout and the length of work experience at the current work place (Beta=0,27) and the level of conscientiousness (Beta=0,26).

Table 2.8. Regression analysis of all groups of burnout factors excluding JSS

N=108	Regression Summary for Dependent Variable: загальнеEB (Spre R= ,68111205 R?= ,46391362 Adjusted R?= ,42638757 F(7,100)=12,362 p<,00000 Std.Error of estimate: 15,191					
	Beta	Std.Err. of Beta	B	Std.Err. of B	t(100)	p-level
Intercept			62,17668	11,81672	5,26175	0,000001
sleep quality 1-bad, 5-excellent	-0,234612	0,082586	-5,47799	1,92830	-2,84083	0,005453
conscientiousness	0,263051	0,073846	1,53580	0,43114	3,56216	0,000565
sleep pills 0-no, 1-yes	0,226713	0,076805	13,08831	4,43401	2,95180	0,003937
Work experience CURRENT	0,271960	0,074619	0,99336	0,27255	3,64464	0,000427
sleep problems	0,189251	0,083402	0,81341	0,35847	2,26915	0,025407
position change 0-no 1-promotion	0,169550	0,074572	0,24953	0,10975	2,27364	0,025125
neuroticism	-0,123080	0,077828	-0,76376	0,48295	-1,58143	0,116937

That was interesting that sleep quality compared to the previous model where it had a modest number 1,81% increased significantly to 16,62%. When excluding the JSS

component, it is obvious that 25,43% out of 46,39% can be explained by sleep characteristics (See Figure 2.8.).

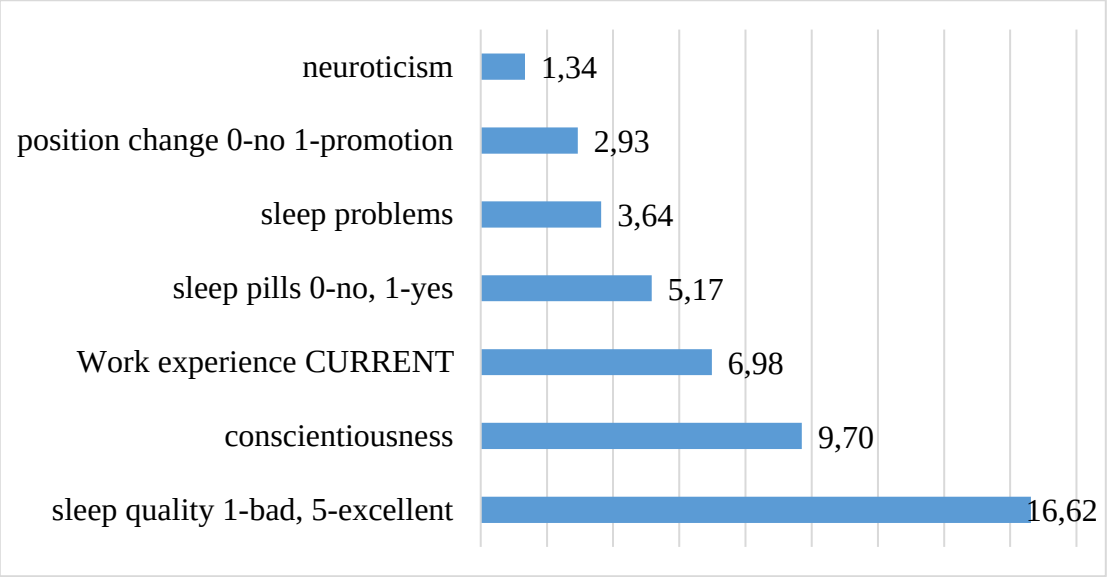


Figure 2.8. The share of significant indicators according to its influence on burnout (total=46,39%)

That was decided to conduct another regression analysis according to the whole range of characteristics of sleep, job and personal traits. The coefficient of regression R^2= 0,64 demonstrated that it is possible to explain almost 64% of burnout causes regarding those characteristics. The F-criteria F (10,97) =16,999, $p<0,05$ prove the significance of this model (See Table 2.9.).

This model allowed to summarize the entire objective of this research. The main task was to assess the possibility of sleep characteristics to be predictors of burnout among employees.

Among other 2 factors of burnout such as job characteristics and personality traits, sleep characteristics can be considered as factors of burnout predictors. These outcomes are possible to be corroborated by the regression analysis.

There are 10 major characteristics which should be taken into account regarding the burnout anticipation and 5 of those components are characteristics of sleep such as subjective feeling of being rested after sleep, sleep problems, consuming of sleep medication, subjective assessment of sleep quality and even dream memorizing (See Table 2.9.). It means that sleep can be a predictor of burnout along with other factors according to the theoretical model of this research.

Table 2.9. The overall regression model including all burnout group factors

N=108	Regression Summary for Dependent Variable: загальнеEB (Spre R= ,79792712 R?= ,63668769 Adjusted R?= ,59923281 F(10,97)=16,999 p<,00000 Std.Error of estimate: 12,698					
	Beta	Std.Err. of Beta	B	Std.Err. of B	t(97)	p-level
Intercept			112,9298	12,60171	8,96147	0,000000
JSS	-0,456129	0,069190	-12,8789	1,95358	-6,59243	0,000000
feels after sleep 0-tired, 1-rested	-0,116093	0,075189	-4,6388	3,00437	-1,54402	0,125840
conscientiousness	0,198525	0,063775	1,1591	0,37235	3,11289	0,002435
sleep problems	0,082787	0,073136	0,3558	0,31434	1,13196	0,260440
sleep pills 0-no, 1-yes	0,169983	0,066096	9,8132	3,81578	2,57176	0,011636
Work experience CURRENT	0,154414	0,065032	0,5640	0,23754	2,37444	0,019544
sleep quality 1-bad, 5-excellent	-0,144706	0,078366	-3,3788	1,82978	-1,84653	0,067864
Dreams memorizing 0-no 1-yes	0,117778	0,064511	4,9548	2,71393	1,82570	0,070972
position change 0-no 1-promotion	0,080778	0,064115	0,1189	0,09436	1,25990	0,210729
neuroticism	-0,079466	0,065991	-0,4931	0,40950	-1,20420	0,231443

The overall percentage of all sleep characteristics in this model estimates 16,56% and it means that those characteristics can explain burnout in accordance with this numbers. The most significant sleep characteristics here is feeling after sleep which, as it was assumed above, can be related to job satisfaction. This characteristic was not available to be recognized in the previous model, where job satisfaction was excluded from the regression analysis. This result demonstrates that feeling after sleep of employees should be considered through the job characteristics, in particular, the component of job satisfaction.

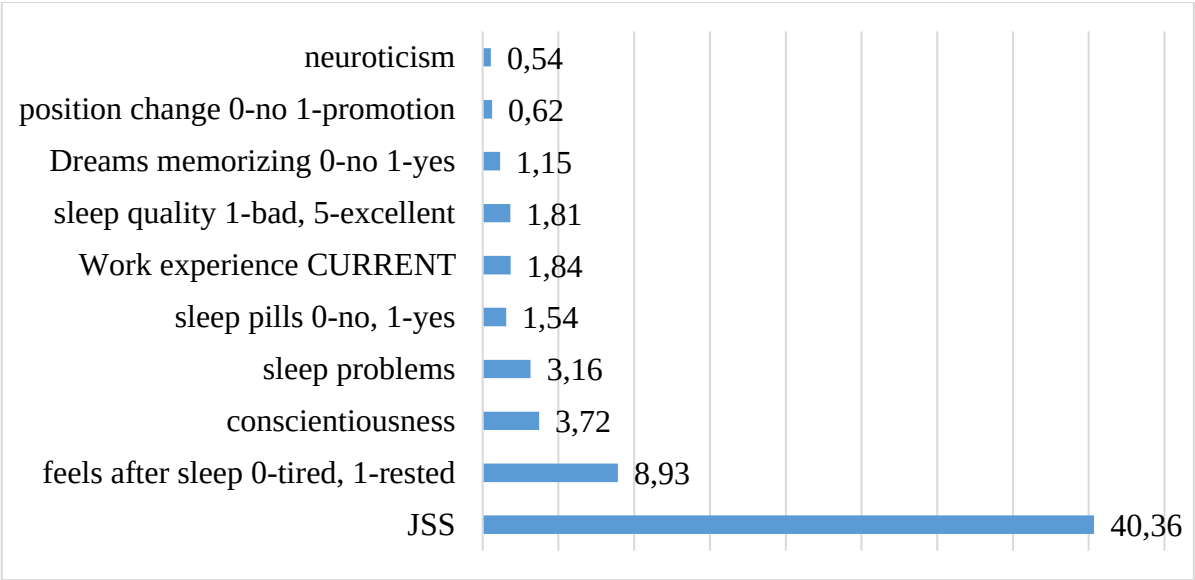


Figure 2.9. The share of significant indicators according to its influence on burnout (total=62,42%)

The only new variable which appeared in this regression model is a remembering of dreams by employees after sleep. It means that dreams should be researched more in the frameworks of burnout (See Figure 2.9.).

Conclusions to the chapter II

This research was conducted with the use of 4 major questionnaires to determine the general level of burnout (Burnout self-assessed inventory by V. Dudiak), to identify the influence of sleep characteristic on the burnout (author's inventory based on The Pittsburgh Sleep Quality Index), the impact of job satisfaction on the prediction of burnout (Job Satisfaction Questionnaire) and to underline the major personality factors which can be crucial on the way of predicting the emotional burnout among the employee (The Big Five Locator). Regarding the particularities of burnout predictors, there was an inventory

prepared to examine the respondents' age, gender, educational background, job title, general work experience, promotional opportunities etc. to receive the information on their work specifics.

A cluster analysis was conducted and 3 groups regarding the level of burnout among employees were identified.

The first hypothesis regarding the sleep differences among people with different levels of burnout was confirmed. People with a high level of burnout have a higher score of such scales as sleep quality, sleep problems and feeling after wake up. There are differences in sleep characteristics among the groups with different levels of burnout.

The second hypothesis regarding the possibility of sleep characteristic to be better predictors of burnout, rather job characteristics was not confirmed. Although sleep characteristics can predict almost a third part of possible burnout symptoms, job characteristics along with job satisfaction are essential indicators of burnout.

The third hypothesis regarding the possibility of all three components of burnout predictors – sleep characteristics, job characteristics and personality traits – to give the strongest burnout prediction, was confirmed. Such personality traits as neuroticism and conscientiousness, along with job satisfaction, work experience at the current workplace, position promotion, and numerous sleep characteristics (feeling restful after sleep, subjective sleep quality, the presence of sleep problems, taking sleep medication, dream memorization) can explain more than 60% of burnout variance.

CHAPTER III
THE DISCUSSION: SLEEP AS A BURNOUT PREDICTOR

3.1. Burnout prediction: why does sleep matter?

Burnout is nowadays a rapidly growing problem among the employees of different companies, a sphere of occupation and job positions. So that is why it is important to define the main predictors of this phenomenon. The results of such work may help specialists to predict and, probably, even prevent the symptoms of burnout.

The first hypothesis of the research is related to the possibility of employees with the high level of burnout to have some differences regarding the characteristics of their sleep, comparing to those who do not demonstrate the burnout at work. First of all, it was decided to divide people into three groups according to their level of burnout using the 4 aspects of this phenomenon mentioned in the work of V. Dudiak (2007). Those results demonstrated a significant difference according to behavioural, affective, cognitive and psychological factors of burnout. People who burnout, demonstrate their symptoms concerning all 4 factors. That provided an opportunity to have 3 groups of people according to their level of burnout: high, medium and low.

The comparison of their sleep features in it. People who have more sleep problems such as sleep difficulties, wake up in the middle of the night, breath problems, a feeling of cold of heat, had a bad dream or felt pain all have the higher level of burnout. Therefore, those with a lower score of sleep problems, the higher score of sleep quality and felt better after sleep, were people who had a lower level of burnout. That is obvious, therefore, that sleep is a significant component of a healthy person and people who have sleep disturbance are more likely to burn out at work. Probably, that can happen because of the lack of energetic resources of the body.

Sleep quality also demonstrated the same interpretation of results. People with a low personal assessment of their quality of sleep burn out more than those who can affirm that their sleep is good enough. That is possible because of the reflecting of their personal feelings. Thereby, people who feel tired have higher scores of burnout with no difference in the duration of sleep. That can be because they not only feel tired but, exhausted as well. The emotional and physical exhaustion is one of the 3 symptoms of burnout according to C. Maslach (1976).

The educational background, the combination of work and learning at the same time, working from the office or home, personally being a person who runs the business or who work as a subordinate, who have a higher indicator of the length of service or lower, work in the company with the huge number of the employee or small, those factors are not significant when comparing between groups. It means that people who work 5 years in the company and 10 years can have the same level of burnout etc. On the contrary, people who are happier with their job are less likely to be affected by burnout. There was an assumption that the level of job satisfaction depends on personal traits. The conducted analysis showed that people who have higher scores of conscientiousness and are responsible, have goal-oriented attitudes and are practically workaholics, have a higher level of burnout than those who are more volatile and less focused on the final objectives. On the contrary, people who demonstrate neurotics traits are tended to burnout less. In the end, our hypothesis confirmed. People who have a higher level of burnout differentiated by sleep characteristics rather than those who are not. Also, they do not vary by job characteristics but personality traits.

The second hypothesis is based on the assumption that probably sleep characteristics can predict burnout in a better way than other factors of burnout such as work peculiarities.

The results of the regression analysis demonstrated that sleep characteristics can predict almost 30% of burnout variance among employees. The most important predictors

were sleep problems, sleep medication and personal feelings after sleep. As the data of this model is subjective, that can be explained this information which is provided by people, is based on their personal feelings and experience along with their evaluation of sleep, consequently, is more trustful and don't depend on some additional scale of evaluation. The subjective assessment shows that this method can be used also in the following researches and interviews for the better detection of the primary predictors of burnout.

The presence of sleep problems is an important predictor of burnout. This scale consists of the general questions regarding the sleep deprivation during the sleep, examples of feeling during the sleeping time (waking up in the middle of the night, painful feelings, health issues, breathing, bad dreams, cold or hot feeling in the body etc.). Some researchers as M. Vandekerckhove and R. Cluydts (2010, as cited in Söderström et al., 2012) strongly support the opinion that issues related to sleep deprivation during the night can also affect the emotional state and can be related to stress. It means that if stress is one of the causes of burnout (Cherniss, 1980), it is also having strong relations with sleep problems among employees. Subsequently, the assumption regarding the sleep characteristics prognosis of the level of burnout is confirmed. There is 4 characteristic of sleep which can predict burnout. That also means that people who have some sleep difficulties can suffer from burnout.

It can be pointed out that burnout can be predicted with the help of those 4 sleep characteristic components during the First Interview regarding this issue. That means that the highest burnout is, the lower is the indicator of a feeling of an employee after waking up. Burnout can be seen due to higher level of consuming sleep medication need along with a higher level of sleep problems indicator and the lower indicator of sleep quality-evaluation.

It was also demonstrated the possibility of job characteristics to be a predictor of burnout of employees.

The problematic of inappropriate, stressful and overwhelming job-related issues was seen by some researchers as those with a negative impact on health. Thereby, T. Beehr (1990, as cited in Best et al., 2005) pointed out that the characteristics of a job by itself along with the workplace environment can be a cause of the health problems. Other scholars considered a burnout as a specific job-related denomination with a strong attachment to stress because of the traditional comprehension of relations between people and its surrounding. That linkage was considered by R. Lazarus, A. DeLongis, S. Folkman and R. Gruen (1985, as cited in Best et al., 2005) as a precondition to the responses to stress and, subsequently, to burnout. That is why it was decided by C. Maslach (2003, as cited in Best et al., 2005) to investigate the functionality of relationships between job and a person, as it was stated that the lack of balance between those two categories can be prerequisites to the burnout.

According to the above-mentioned research, it was established a model to clarify the links between job characteristics and its possibility to be predictors of burnout among employees based on subjective appraisals. The subjective assessment of particular information, following T. Judge, E. Locke C. Durham and A. Kluger (1998, as cited in Best et al., 2005), is rooted to the primary allegations of people towards them, their environments and the whole world. That means that this subjective scale can be considered as a valid one because it provides us with the proved information regarding each respondent.

Job satisfaction is also a characteristic of the job so it was considered as one of the predictors and influencers of burnout according to J. Wolpin, R. Burke & R. Greenglass (1991, as cited in Best et al., 2005). Also, the satisfaction with the job was considered by D. Fields (2002, as cited in Kim et al., 2017) as an effective backlash on the work which they are performing. Hence, there was considered a JSS questionnaire and the possibility of its scales to have an impact on the emergence of burnout.

To reinforce the importance of regression model which includes job characteristics, it is possible to examine the empirical research of particular researchers as C. Maslach and W. Schaufeli (1993, as cited in Kim et al., 2017), who investigated the linkages between job burnout and job satisfaction.

It can be also approved by the study conducted by J. Jones (1981, as cited in Penn, et al., 1998) which stated that the level of burnout out depends also on the level of dissatisfaction with the job. It is also possible to summarize that greater job dissatisfaction leads to a higher level of burnout.

Another category of the job characteristics showed that people who combine work and studying at the university are more likely to experience burnout. It can also be possible due to the higher level of emotional exhaustion according to C. Maslasch et al. (2001), which is one of the major components of burnout by W. Kim, et al. (2017). The emotional exhaustion can be accompanied by mental fatigue. Another research conducted by W. Schaufeli et al. (1996, as cited in Kim et al., 2017) stressed that emotional exhaustion emerges according to the expended abilities of the cognitive and physical sphere.

The total amount of work experience according to the current position means that people started their work recently and accumulating all their resources to be more engaged in the work specifics. Also, people who have less experience and, consequently, lower job position may be tended to burnout more than those who have a higher position.

It was decided during the conducting regressive analysis that job satisfaction as a major influencer will be eliminated from the general model to check if there are more questions which can be facilitators to the issue of burnout as well. So the same range of data was chosen and slightly different results were obtained.

That means that the highest burnout is the higher is the indicator of the volume of the company. There is a relationship between the number of employees in the company and burnout in general. Furthermore, the highest is the level of burnout, the highest is the influence of the indicator regarding the combination of work and learning. It is possible

to summarize the other 2 results from related indicators as those which have an impact on the level of influence concerning the burnout of employees (total work experience of actual job position and change of position – promoting or not).

This model which includes personality traits is well-organized and coherent that allows processing important manipulation with the data of personality traits to obtain needed relations (McCrae & Costa, 2007).

Personal traits also were researched regarding their influence on the level of burnout. The scale of neuroticism showed that it is not possible to predict the burnout using this scale. Our research demonstrated that emotionally unstable people are less likely to burnout. However, B. Morgan and K. de Bruin (2010, as cited in Maylor, 2017) stated that people with the neurotic traits are mostly depressive, anxious, pessimistic and have low esteem and usually have a negative view on the situations around them. Their research along with A. Bakker, K. Van Der Zee, K. Lewig, and M. Dollard, (2006, as cited in Maylor, 2017) and G. Celik and E. Oral (2013, as cited in Maylor, 2017) demonstrated that people of neurotic personality type are suffering from emotional exhaustion which is one of the three indicators of burnout. It was also stressed by A. Bakker, K. Van Der Zee, K. Lewig, and M. Dollard (2006, as cited in Maylor, 2017) and K. Storm and S. Rothmann (2003, as cited in Maylor, 2017) that among other traits, neurotics are people who more frequently suffer from burnout. That was stressed by F. Cano-Garcia, E. Padilla-Munoz and M. Carrasco-Ortiz (2005, as cited in Maylor, 2017) that people who belong to neurotic type had higher scores of burnout and characterized with such traits of the neurotic state as emotional negativity, and instability and stress reaction. The research conducted by K. Zellars, P. Perrewe and W. Hochwarter (2000, as cited in Bakker et al., 2006) regarding the personal traits and burnout, showed that using the data of neuroticism indicators it was possible to predict such symptoms of burnout as depersonalization and emotional exhaustion. And in the research of A. Azeem (2013, as cited in Sharma & Kashyap, 2017), it was possible to find out that all three dimensions of burnout can be forecasted by

neuroticism. On the contrary, our research showed that neurotics demonstrate a lower level of burnout. It can be that they are or not negatively oriented, or less emotionally stable or have a lower stress reaction. The following research can be left for limitations.

Another scale presented the information about the openness to experience. That means that people who are more opened to new experience are less likely to burnout. Also, people who are open to new approaches tend to be creative, artistically gifted and are open to new trends and ideas. There were provided with some research by G. Alarcon, G. Eschleman, and N. Bowling (2009, as cited in Maylor, 2017) and B. Swider and R. Zimmerman (2003, as cited in Maylor, 2017) which posited that people who have a high level of being open to a new experience are not suffering from the burnout. It means also that they are not suffering from frustration in the workplace. Also, it was pointed out by I. Unaldi, M. Bardakci, F. Dolas, and D. Arpaci (2013, as cited in Sharma & Kashyap, 2017) that openness didn't have a relationship with depersonalization but with personal achievements.

The scale of conscientiousness demonstrated that people who have a higher level of conscientiousness characterized by a higher level of burnout. This traits according to G. Alarcon, G. Eschleman, and N. Bowling (2009, as cited in Maylor, 2017) reflects people who are goal-oriented, well-organized, responsible, reliable and hardworking. There is also particular research conducted by A. Bakker, K. Van Der Zee, K. Lewig, and M. Dollard (2006, as cited in Maylor, 2017) that this type of people is less likely to demonstrate such burnout symptoms as depersonalization and they are positioning their work as a productive. However, in the research of A. Azeem (2013, as cited in Sharma & Kashyap, 2017), it was possible to predict the burnout and its 3 dimensions by the level of conscientiousness. Researchers J. LePine, M. LePine, and C. Jackson (2004, as cited in Bakker et al., 2006) stated that it was possible to predict burnout dimension as emotional exhaustion through conscientiousness.

On the contrary, our research showed that the more person is emotionally unstable, the lower is the risk of burnout. That means that the level of emotional instability can be a factor which eliminates the risk of burnout. So people of a neurotic structure are almost not tended to burnout in general (their emotional reaction can preserve them from burnout).

Sleep characteristics are important predictors of burnout but job satisfaction along with particular characteristics of job can predict this phenomenon better.

Final hypothesis aimed to find out if those 3 factors of burnout as sleep and job characteristics along with personality traits can all be a predictor of burnout.

It was stated by N. Thomson et al. (2014, as cited in Fontova-Almató et al., 2020) that conditions of work and salary are the major indicators which help companies preserve their staff. Those two components help increase the motivation of work, productivity, performance and other improvements towards working attitude. Also, the satisfaction of job was considered by B. Coomber, B. and K. Barriball (2007, as cited in Fontova-Almató et al., 2020) as the scope of personal feelings of employees which they have towards their work and their assessment regarding the fulfilment of personal professional requests. According to the motivation-hygiene theory of Herzberg, job satisfaction can be divided into 2 groups: motivational factors which included responsibility, gratitude, achievement recognitions and have string connection to work and situational factors which includes conditions of work, supervision, relations between employees and working surroundings (Talachi & Gorji, 2013). The research conducted by B. Piko (2006, as cited in Talachi & Gorji, 2013) and M. Aya and S. Avsaroglu (2010, as cited in Talachi & Gorji, 2013) proved that there are some strong relations between burnout and job dissatisfaction when satisfaction with one's job negatively correlated with burnout. That means that this scale consists of many important indicators which can be predictors of burnout as well.

Another job characteristic as a change of job position among employees has a linkage to burnout. People who were promoted have a higher level of burnout because

they worked more for this personal achievement. It is also possible that promotion took more efforts and people sacrificed their personal needs. It could be also explained as a response to the increased level of exhaustion.

Important job characteristic such as total work experience can also predict burnout. There were some researchers as M. Fisher (2011, as cited in Ziaei M. et al., 2015) and M. Mukundan & T. Ahour (2011, as cited in Ziaei M. et al., 2015) who stated that there is a relationship between work experience and burnout. Longer people work in a particular position, more they are tended to be tired emotionally and their achievements are lower. It will increase the level of stress and lead to burnout eventually.

The personality traits, according to the research of K. Zellars, P. Perrewe and W. Hochwarter (2000, as cited in Bakker et al., 2006) have an impact on burnout. The neuroticism in our model demonstrate that it can be a predictor of burnout. There is a clear definition of the result that emotionally unstable people with a higher level of neuroticism tend to burnout less. Probably they can demonstrate more positive score regarding the level of emotional negativity and better reaction on the stress.

Conscientiousness can be a predictor of burnout along with neuroticism. This personality trait was researched by A. Bakker, K. Van Der Zee, K. Lewig, and M. Dollard, (2006, as cited in Maylor, 2017) who stated that there is an interrelation between burnout and this trait. It is also possible to say that people who are more responsible, reliable and goal-oriented are tended to burn out more because they are more engage with work and spend more time on this activity.

Sleep characteristics play an important role in this model as there are 4 characteristics of sleep out of 9 which are related to burnout: a subjective assessment of sleep quality, consuming of sleep pills, sleep problems and feelings after sleep, remembering of dreams. This supports the statement of the possibility and significance of sleep components in the predicting of burnout syndrome. People who have negative results of sleep evaluation regarding the personal sleep quality, some sleep problems

(sleep deprivation, sleep disturbance, bad dreams, different feeling during the sleep), their feelings after waking up such as tiredness and the need to consume sleep medication to fall asleep, can be regarded as those who suffer from the impact of burnout.

It was pointed out by the O. Lisova and E. Pavlynska (2016) that sleep helps us to process information and prepare a place for a new one. Probably sleep problems can be caused by overburdening and chaotic way of things which lead to burnout. They also stated that sleep disturbance and sleep deprivation can be a reason for a disrupted psychological state. A. Denisiievska (2019) stressed that sleep quality is an inevitable part of a healthy person with sufficient and productive psychological activity. She also pointed out that people who sleep less can feel tired and less concentrated in the daytime. Also sleep deprivation can be a major cause of bad mood, dramatic fall in the level of mental performance and physical activity according to I. Prychepa (2013). It was stated by I. Beskova (2005) that people who do not have dreams can suffer from different personality disorders. Also according to N. Stoyukhina and A. Kostrigin (2014) dreams can be the reflexes of daytime activity. That means that sleep can be an indicator of burnout as well but not the main. People who are more engaged in the working process sleep less but after can also suffer from burnout.

Taking into account the most significant components of the previous models as neuroticism, openness to experience and conscientiousness, feeling after waking up, sleep quality, sleep problems and sleep medication, it is possible to see which of those characteristics have an influence on the burnout in this amount of data. It was also possible to found out a share of each component in the model.

In conclusion, job satisfaction along with other job characteristics can be a major predictor of burnout in this model. That means that taking into account this variable will be possible to predict the level of burnout among employees. Sleep characteristics are even slightly more important here. Variables related to personal traits exclude openness to experience. It was also researched by B. Swider and R. Zimmerman (2003, as cited in

Maylor, 2017) that people who are open to new approaches, ideas and new experience are not suffering from the burnout. Probably, because they are less anxious, overburdened with different limitation and have less stressful events because they can adapt better to a new environment.

It is interesting to analyze those results in the framework of psychodynamic analysis. Sleep is an inevitable part of health and that is why it can have an impact on the burnout. According to the research, people with a low score of personal assessment of sleep quality without a difference in their sleep duration have a higher level of burnout. That means that they are not only tired because of their daily routine but probably, exhausted physically and mentally. C. Maslach (1976) pointed out that those type of exhaustion is the major symptoms of burnout. According to S. Vanheule (2003) burnout also can be seen as a gradual process of the exhaustion evolvement. So on the level of sleep quality, it is possible to conclude that those variables are related by the mental exhaustion of people. It is also can be proved but the research of the M. Vandekerckhove and R. Cluydts (2010, as cited in Söderström et al., 2012) who stressed that people who experience sleep deprivation can have problems with the emotional state of their mental health. Consequently, people who are still tired after their sleep and who need their medication to fall asleep in the time perspective will end up with burnout because of their mental exhaustion.

Personal traits play an important role in the occurrence of burnout. According to A. Azeem (2013, as cited in Sharma & Kashyap, 2017) people who possess such traits as being hardworking and too responsible have a higher level of burnout in the frameworks of conscientiousness. They are more engaged in work and put more efforts into achieving their goals. S. Vanheule (2003) underlined that people who have a high level of burnout have narcissistic and masochistic personality traits. That is why those who are eager to achieve more by hard work may be driven by narcissistic personality traits. They also can be masochistic in the way of overwhelming personal efforts as they keep trying to use all

their resources to achieve their objectives, even so, they cannot receive those invested efforts back from others. In this situation, those who fail on their final objectives, have a strong feeling of dissatisfaction, disappointment and frustration. Job satisfaction is a leading component of the final regression model. People who are more satisfied with their job do not experience those feeling because their self-devotion to job resulted in positive outcomes and they meet their expectations. It was stated by A. Pines and O. Yanai (2000, as cited in Pines, 2002) that people try not only to achieve what was expected by themselves but also by their parents. So probably those are less satisfied with their jobs because of lower salaries, no opportunities of personal growth and, in general, bad personal achievements which repeat their childhood traumas of being told to be useless, neglected and perceived by their parents as life losers. Also one of the components of job satisfaction is communication and relations with coworkers. According to H. Freudenberg (1980) people with a high level of burnout try to replace all social interactions with work. Probably those people who do not have appropriate social life are less satisfied with their working environment and are tend to burn out more.

Another way to present the result of personality traits influence on the burnout can be seen through the work of A. Pines (1993, as cited in Pines, 2002) who stated that people keep trying to find the real meaning of their life's through the occupational performance. So they work hard with special accent on the devotion to work without noticing their personal needs and in the end, they are too exhausted to continue. Probably, that is the way of becoming important to their coworkers. Such personality features can lead to burnout. Consequently, through those personal traits, it is possible to explain why those who were promoted recently have higher indicators of burnout, along with those who work longer on their job position.

O. Lisova and E. Pavlynska (2016) stated that information procession is possible because of sufficient sleep. That is possible that sleep difficulties are caused by overwhelming thoughts regarding their work and chaotic way of thinking and results in

disrupted psychological state. That is also possible that bad quality of sleep which requires medication caused not only by the job characteristics but deeper reasons which are placed among those indicators and are related to the job.

That is possible to make an assumption that in this research employees who are less satisfied with their job cannot cure their childhood narcissistic traumas related to personal achievements through their sacrifices and overburdening efforts. They keep trying to be perfectionists and become best of the best and after they can literally 'burn' ourselves during this process. Also, they are tended to communicate less with others which is related to depersonalization. That symptom of burnout has relation with their ego. According to S. Vanheule (2003), depersonalization is the result of ego loss. Ego is responsible for the unity of personality and its activity. So a person with burnout is disintegrated and has an inappropriate functioning. He also pointed out that those people who suffer from burnout perceive their parental part as a threat and because of that, a critic towards their accomplishments is perceived as a consequence of personal failure.

The most significant traits of sleep characteristic as the feeling after sleep demonstrated its relation with job satisfaction. So probably people who feel tired after sleep tends to burnout more because of low job satisfaction. One of the problems of burnout can be exhaustion because of the self-idealization attempt through the gas between actual and ideal ego.

3.2. Recommendations: what to do with sleep-burnout relations?

Nowadays burnout becomes an important aspect of the work-life which strongly influence different spheres of work including its productivity. The results of the above-presented research can be important regarding the human resource management sphere because it offers the possibility to predict burnout with the assistance of 3 factors which have an impact on this phenomenon.

According to the M. Leiter and C. Maslach (2016, as cited in Rožman, M. et al., 2018) burnout on the workplace is a major cause for the crisis of interpersonal relations and work accomplishments. K. Ahola et al (2006, as cited in Rožman, M. et al., 2018) pointed out that burnout can result in an increase in turnover of employees and a decrease in the efficiency of the work. That means that this topic is important for consideration by the human resource management sector.

It is important for organizations according to K. Jugdev et al. (2018, as cited in Rožman et al., 2018) to come up with particular programs which can support and engage their staff to increase motivation, productivity, work engagement and creativity but, what is more important, to eliminate the risk of burnout.

The first hypothesis of this work allowed us to find out if people who suffer from burnout differ from the sleep characteristics comparing to those who do not have the burnout symptoms. The results of this comparison demonstrated that there are differences in groups regarding the level of burnout according to sleep problems, sleep quality and the way people feel after they woke up. This result can be used for interviewing people regarding their sleep problems. If they indicated that they have sleep difficulties such as (problems with falling asleep for more than 30 minutes, waking up in the middle of the night and being unable to fall asleep again, having troubled breathing, feeling hot, cold, pain etc.) that means that they can suffer from burnout. Sleep quality as a subjective assessment also should be taken into consideration because of the results regarding the comparison between different group of burnout. It demonstrated that people with a high level of burnout have a lower level of sleep quality. Also, it is useful to ask people about their personal feeling after wake up because those with higher score s of burnout feel more tired even if they slept a lot.

Another important characteristic compared to the level of burnout of employees is job satisfaction. People who are more satisfied with their job tend to burnout less. That means it is useful to use the JSS to measure the level of satisfaction among employees.

There can be also not only individual aspects of job satisfaction but organizational. To prevent some percentage of burnout, it is required to improve a communicational dimension in the company between employees and supervisors, taking into account feedback system, award system and recognition of personal achievements and contributions into the company. That is why organizational approach should be created and well-managed by the staff responsible for the employees' well-being.

The second hypothesis about the possibility of sleep characteristic becomes better burnout predictors than job characteristics, allowed to conclude, that despite being sufficient burnout indicator, job peculiarities along with job satisfaction are major components of burnout according to the regression model.

The most significant sleep characteristics which require the attention of specialists is a subjective assessment of sleep quality. People are offered to indicate their sleep quality from 1 to 5, where 5 is a positive evaluation and 1 negative. That allows to receive a trustworthy personal evaluation of the quality of their sleep and predict almost 17% of possible burnout occurrence. Other characteristics which should be examined are sleep problems (sleep difficulties, sleep deprivation sleep disturbance etc.), consuming of sleep medication by employees and their personal feeling after they woke up. Those components are considerable sleep predictors of burnout among employees.

Job characteristics play an important role in the identification of the level of burnout. People who demonstrate a lower job satisfaction are more likely to experience burnout so that is important to use this job satisfaction questionnaire. Another interesting implication is that those employees who combine work with their educational process have higher chances of burnout. So that means those employees who study (students who work part-time or full-time) have tendencies to burnout. They are more likely to be exhausted from those activates and overwhelming tasks. People who work longer on the current positions are tended to burnout more than those who just started their work. Also, those who have an educational background related to the current work position are tended

to burnout less. That means that those who work without proper education are at risk of the burnout occurrence. People who were promoted recently are less tended to burnout, probably, because they made significant efforts to reach that occupational level. The volume of the company should be taken into consideration as well. People tend to burn out more in big companies because of the stress related to constant competition.

The personal traits also should be taken into account regarding the interviews of employees because it is possible to predict burnout among those people who possess neuroticism and conscientiousness features. The final regression model also demonstrated that traits also can be predictors of burnout.

Those recommendations delineate the main accents regarding the interviews with employees who are in the risk group of burnout. It is also possible to create a yearly questionnaire regarding the burnout emergence among employees and create training which allows people to relax more and improve their sleep. Probably it is possible to use some meditations. Psychological support also will be a benefit regarding the psychodynamic aspect of burnout. There should be prepared some practices which allow people to maintain a balance between personal needs and company requirements.

It was proved by the research that people who are more open to new experience do not suffer from burnout. Probably it is possible to develop some training to rise personal creativity. It may help to decrease stress.

Conclusions to chapter III

In this chapter were explained the main results of this research. There were also reviewed additional researches to create an appropriate interpretation of the outcomes according to chapter 2. Those sources provided important information regarding the burnout and its relation with sleep characteristics, job characteristics and personality traits. This research expanded the data concerning the possibility to predict burnout with the

sleep characteristic analysis. The psychodynamic aspect of this research was provided and described to make important accents of research. The ego may place an important role in the burnout occurrence. Based on the literature overview and interpretation of results were developed recommendations for the human resource management field. There were highlighted the main characteristics which play an important role in the prediction of burnout syndrome among employees.

CONCLUSIONS

In modern society, burnout is considered as a phenomenon which has an impact on the mental health of employees because of its relation to different occupations fields. This influence is particularly traumatic and results in the emotional disability, exhaustion, personality deterioration and possible productivity difficulties. That is why it was decided to identify the range of factors which have an important influence on the predictability of this syndrome. One of this factor was assumed to be sleep characteristics. Unfortunately, the research regarding the causes of burnout is limited, especially, those related to sleep peculiarities.

The main goals of this study are related to the possibility of sleep characteristics to be a predictor of burnout. At the beginning of the research, there were developed objectives of this research which referred to the identification of the burnout phenomenon and feature of sleep as burnout indicators, choosing the most suitable methodic for the identification of burnout level and distinguishing sleep characteristics, regression analysis between burnout groups and those characteristics of sleep and development of recommendation for burnout prediction. Those tasks were accomplished.

According to the literature overview, the theoretical model of burnout predictors was created including job, personality and sleep characteristics. Due to the model, the empirical research was conducted to identify the strongest predictors of those three groups and to describe the best model of burnout prediction.

The first hypothesis regarding the possibility of different sleep characteristics to be a predictor of burnout was confirmed. A significant difference in several of them was identified. People who had higher indicators of sleep problems and assessed their sleep quality at the lowest rate belonged to the group with a higher level of burnout. Also, it was found out that, even so, these people can sleep all night, they still have the feeling of

tiredness after waking up. People with a more significant level of burnout also tend to be less gratified with their job.

The second hypothesis regarding the possibility of sleep characteristics to be better predictors of burnout than job characteristics did not confirm. Although such sleep characteristics as feelings after sleep, consuming of sleep medication, a subjective assessment of sleep quality and different sleep problems can be good predictors of burnout with its 28%, such job characteristics as a change of position in the company (recent promotion), general work experience related to the certain position, combination of work and study, the volume of the company along with job satisfaction are the best contributors to the burnout anticipation.

The third hypothesis was related to the possibility of all three factors to be included in the model of burnout predictors. This hypothesis is confirmed. Personality traits such as neuroticism and conscientiousness, job characteristics such as change of position (promotion or not), general work experience on the current workplace and job satisfaction along with such sleep characteristics as the feeling after sleep, sleep problems, sleep medication, subjective assessment of sleep quality and a possibility to remember dreams can be major predictors of burnout. It is important to emphasize on the fact that the general regression model demonstrated that among 10 general predictors of burnout, 5 of them belong to the sleep characteristics.

The recommendations for the specialists in the human resource management for interviewing of employees regarding burnout phenomenon were created, based on the results. Particular sleep characteristics should be taken into account during the interviewing of personnel by human resource experts along with job characteristics and personality traits. It is also possible to create specific training to improve the quality of sleep.

The possible limitations of this research are related to various aspects. That is possible that fields of occupation can have a different impact on the level of burnout

among employees. The difference in the percentage of women and men can also be a factor of burnout level. In this research the vast majority of respondents were women. The lack of impartial measurements of sleep characteristic can limit the final impact of sleep characteristics on burnout. There is also a lack of information regarding the differences between burnout and depression. All those components can be included in further research.

The perspectives of this research can include the undertaking of qualitative research for the deeper understanding of sleep characteristics and dreams of employees. That means that this idea can be extended from the pilot project to the overall study of the particular sleep characteristics which can be indicated in the interview and sleep patterns of those who have the higher level of burnout. This research can be supplemented with further research of sleep particularities and dream of employees who tend to burnout during their professional performance.

REFERENCES

Abrumova, A. H. (1985). Абрумова А.Г. Анализ состояний психологического кризиса и их динамика. *Психологический журнал, 6(6),* 107-115.

Bakker, A. B., Van der Zee, K. I., Lewig, K. A., & Dollard, M. F. (2006). The relationship between the big five personality factors and burnout: A study among volunteer counselors. *Journal of Social Psychology, 135(5),* 1-20. https://doi.org/10.3200/SOCP.146.1.31-50

Benediktsson, A. S. (2019). The Relationship Between Physical activity, Sleep and Burnout Symptoms. *School of business*., 1-25. Retrieved from: https://pdfs.semanticscholar.org/b9fb/4613a796616deb8e932dc59845bba029462b.pdf

Benington, J. H. and Heller, C. H. (1995). Restoration of brain energy metabolism as the function of sleep. *Progress in Neurobiology, 45(4),* 347–360. doi: 10.1016/0301-0082(94)00057-o

Beskova, I. A. (2005). Бескова І. А. *Природа сновидений (епистемологический анализ)*. Москва: ИФ РАН, 1-239. Режим доступа: https://iphras.ru/uplfile/root/biblio/2005/Beskova_1.pdf

Best, R. G., Stapleton, L. M., & Downey, R. G. (2005). Core Self-Evaluations and Job Burnout: The Test of Alternative Models. *Journal of Occupational Health Psychology, 10(4),* 441–451. doi: 10.1037/1076-8998.10.4.441

Boyko, V. (1996). Бойко, В.В. *Энергия эмоций в общении: взгляд на себя и на других*. Москва.: Филинъ, 1- 472. Режим доступу: https://psytests.org/book/boyko-energy-of-emotions.html

Brill, P. L. (1984). The need for an operational definition of burnout. *Family & Community Health, 6*, 12-24.doi: 10.1097/00003727-198402000-00005

Burlachuk, L., Korovel D. (2000). Бурлачук Л. Ф., Королёв Д. К. Адаптация опросника для диагностики пяти факторов личности. *Вопросы психологии*, *1*, 126–134.

Buysse, D. J., Reynolds, C. F., Charles, F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh sleep quality index: a new instrument for psychiatric practice and research. *Psychiatry Research, 28(2)*, 193–213.

Chen, H.., Wu P., Wei W. (2012). New Perspectıve On Job Burnout: Exploring The Root Cause Beyond General Antecedents Analysis. *Psychological Reports, 110 (3)*, 801-819. doi:10.2466/01.09.13.PR0.110.3.

Cherniss, C., (1980). *Professional Burnout in human service organization*. New York: Prager Publishers. doi:10.1177/000271628145800134

Chung, M. and Harding C. (2009). “Investigating Burnout and Psychological Well-Being of Staff Working with People with Intellectual Disabilities and Challenging Behaviour: The Role of Personality.” *Journal of Applied Research in Intellectual Disability 22*, 549-600. doi: 10.1111/j.14683148.2009.00507.x

Chutko, L.S. and Kozina, N. V. (2013). Чутко Л.С., Козіна Н.В. *Синдром эмоционального выгорания*. Москва.: МЕДпресс-информ, 1-256.

De Keijzer, R. and Nelson, E., (2018). The Relationship Between Diagnosed Burnout and Sleep Measured by Activity Trackers: Four Longitudinal Case Studies. *Uiversity of Twente*, 1-25. doi: 10.1007/978-3-030-34833-5_24

Denisiievska, A.Y. (2019). Денісієвська А.Є. Особливості суб'єктивної якості сну. *Науковий вісник ХДУ Серія Психологічні науки (1)*, 333-337. doi:10.32999/ksu2312-3206/2019-1-55

Domhoff, G. (2000). Methods and measures for the study of dream content, *Principles and Practices of Sleep Medicine, (3),* 463-471. Retrieved from: https://dreams.ucsc.edu/Library/domhoff_2000 a.html

Druzhilov, S. A. (2013). Дружилов С. А. Психологические факторы здоровья человека и детерминанты его негативных психических состояний в труде. *Международный журнал экспериментального образования, 10 (2)*, 250-253. Режим доступу: https://www.expeducation.ru/ru/article/view?id=4222

Dydiak, V. (2007) Дудяк В. *Емоційне вигорання*. Київ: Главник, 1-126.

Ekstedt, M., Söderström, M., Åkerstedt, T., Nilsson, J., Sondergaard H.-P., & Perski, A. (2006). Disturbed sleep and fatigue in occupational burnout. *Scandinavian Journal of Work, Environment and Health, 32,* 121– 131. doi:10.5271/sjweh.987

Evans, B.K. and Fischer, D.G., 1993, The nature of burnout: a study of the three-factor model of burnout in human service and non-human service samples. Journal of Occupational and Organizational Psychology, 66, pp. 29–38. doi: 10.1111/j.2044-8325.1993.tb00514.x

Fontova-Almató, A., Suñer-Soler, R., Salleras-Duran, L., Bertran-Noguer, C., Congost-Devesa, L., Ferrer-Padrosa, M., Juvinyà-Canal, D. (2020). Evolution of Job Satisfaction and Burnout Levels of Emergency Department Professionals during a Period of Economic Recession. *Int J Environ Res Public Health;17(3)*. doi: 10.3390/ijerph17030921

Freudenberger, H. J. (1974). Staff burnout. Journal of Social Issues, 30, 159 –165. doi: org/10.1111/j.1540-4560.1974.tb00706.x

Gustafsson, G., Persson B., Eriksson, S., Norberg, A. and Strandberg, G. (2009). "Personality Traits among Burnt out and Non-Burnt out Health-Care Personnel at the Same Workplaces: A Pilot Study." *International Journal of Mental Health Nursing 18(5)*: 336-48. http://dx.doi.org/10.1111/j.1447-0349.2009.00623.x

Hryzuk, O. V. (2012). Грицук, О. В. Основні принципи та підходи в дослідженні синдрому емоційного вигорання у зарубіжній психології. *Актуальні проблеми психології, 35(1),* 30-33. Режим доступу: http://appsychology.org.ua/data/jrn/v1/i35/8.pdf

ICD-10-CM Codes. (2020). *ICD-10-CM Diagnosis Code Z73.0. Burn-out*. Retrieved from:https://www.icd10data.com/ICD10CM/Codes/Z00-Z99/Z69-Z76/Z73-/Z73.0.

ICD-11 for Mortality and Morbidity Statistics. (2019). *QD85 Burn-out*. Retrieved from: https://icd.who.int/browse11/l-m/en

Ilyin E. P. (2008). Ильин Е. П. *Эмоции и чувства*. Питер: СПб., 1- 783.

Jacobs, S. R. and Dodd, D. K. (2003). Student burnout as a function of personality, social support, and workload. *Journal of College Student Development 3 (44),* 291-303. doi:10.1353/csd.2003.0028.

Kim, W. H., Ra, Y.-A., Park, J. G. and Kwon, B. (2017). Role of burnout on job level, job satisfaction, and task performance. *Leadership & Organization Development Journal, 5 (38),* 630-645. doi: 10.1108/LODJ-11-2015-0249.

Koltunovych, T. A. (2016). Колтунович, Т. А. *Психологічні умови корекції професійного вигорання у вихователів дитячих навчальних закладів*. Острог, 1- 352. Режим доступу: https://www.oa.edu.ua/doc/dis/dis_ Koltunovych.pdf

Kovalkova, T. O. (2016). Ковалькова, Т. О. Вивчення передумов та симптомів синдрому емоційного вигорання у викладачів вищих навчальних закладів. *Правничий вісник Університету «КРОК»*, 25, 191-198.

Kuppermann, M., Lubeck, D. P., Mazonson, P. D., Patrick, D. L., Stewart, A. L., Buesching, D. P., & Filer, S. K. (1995). Sleep problems and their correlates in a

working population. *Journal of General Internal Medicine, 10(1),* 25–32. https://doi.org/10.1007/BF02599573

Langle, A. (2003). Burnout – Existential Meaning and Possibilities of Prevention. *In: European Psychotherapy, 1 (4),* p. 107-121. Retrieved from: http://xn--lngle-gra.info/downloads/Burnout%20-%20EP%2003.pdf

Lisova, O. S. and Pavlynska, E. O. (2016). Лісова О. С., Павлинська Є. О. Індивідуально-психологічні фактори здорового сну сучасних студентів. *Психологія: реальність і перспективи, 6*, 110-116. Режим доступу: http://nbuv.gov.ua/UJRN/prp_2016_6_23

Lu Y., Zhang Z., Gao S., Yan H., Zhang L., Liu J. (2020). The Status of Occupational Burnout and Its Influence on the Psychological Health of Factory Workers and Miners in Wulumuqi, China. *BioMed Research International*, 1-12. doi:10.1155/2020/6890186

Lysenkova, I., Honcharova, H. (2018). Лисенкова І, Гончарова Н. Діагностика, профілактика та корекція синдрому емоційного вигорання у соціальних робітників. *Вісник Національної академії Державної прикордонної служби України. Серія: Психологія (3).* - Режим доступу: http://nbuv.gov.ua/UJRN/Vnadpn_2018_3_10 Visnyk of the National Academy of Governmental State Border Service, 2018. – p. 1-9.

Makarchuk, M. et al. (2011). Макарчук, М. Ю., Куценко, Т. В., Кравченко В. І., Данилов С. А. *Психофізіологія: навчальний посібник*. Київ: ООО «Інтерсервіс», 1- 329.

Malyar-Gazda, N. M. (2015). Емоційне вигорання - актуальна проблема медицини сьогодення. *Проблеми клінічної педіатрії, 3*, 27-31. Режим доступу: http://nbuv.gov.ua/UJRN/pkp_2015_3_6

Marquie, J. C., Foret, J., Queinnec, Y. (1999). Effects of Age, Working Hours, and Job Content on Sleep: A Pilot Study. *Experimental Aging Research, 25(4)*, 421–427. doi:10.1080/036107399243896

Marych, Y. O. (2019). Марич, Я. О. Взаємозв'язок емоційної компетентності керівника та психічного здоров'я на робочому місці його підлеглих (команди). *Магістерська робота на здобуття кваліфікації магістра*. Львів:УКУ, 48-50.

Maslach, C. (1993). *Burnout: A multidimensional perspective. Professional burnout: Recent developments in the theory and research*. Washington D.C.: Taylor & Trancis, 19-32. doi: 10.4324/9781315227979-3.

Maslach, C., Schaufeli W. and Leiter M. (2001). Job Burnout. *Annual Review of Psychology 52*, 397-422. doi:10.1146/annurev.psych.52.1.397

Maylor, S. (2017). The Relationship Between Big Five Personality Traits and Burnout: A Study Among Correctional Personnel by Sharon A. Maylor M.S. Springfield

College 2008 B.S., Springfield College, 2007. *Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy Psychology Walden University*, 110 p. Retrieved from: https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=6214&context=dissertations.

McCrae, R. and Costa, P. (2007). Brief versions of the NEO-PI-3. *Journal of Individual Differences, 28(3)*, 116-128. doi: 10.1027/1614-0001.28.3.116.

Menegetti, A. (1997). Манегетті, А. *Клиническая онтопсихология*. / Пер. с итал. Москва.: Славянска асоциация Онтопсихологии, 1-132.

Morrow, L. (1981). The burnout of almost everyone. *Time magazine*, p.84.

Nielsen, T., Kuiken, D., Hoffmann, R., Moffitt, A. (2001). REM and NREM Sleep Mentation Differences: A Question of Story Structure? *Sleep and Hypnosis, 3 (1)*, 9-17.

Ozhogova, E. H. (2008). Ожогова Е. Г. Взаимосвязь синдрома «психического выгорания и особенностей ценностносмысловой сферы у педагогов. *Психологический журнал, 3 (5)*, 17–28.

Penn, M., et al. (1998). Penn, M., Romano, J. L., & Foat, D. (1988). The relationship between job satisfaction and burnout: A study of human service professionals. *Administration in Mental Health, 15(3)*, 157–165https://doi.org/10.1007/BF00869249

Pines, A. (2002). Teacher Burnout: A psychodynamic existential perspective, *Teachers and Teaching: Theory and Practice, 8(2),* 121-140 doi: 10.1080/13540600220127331

Pryschepa, I. M., Efemenko, I. I. (2013). Прищепа И. М., Ефеменкою И. И. *Нейрофизиология: учебное пособие*. Минск: Вішюшк, 1-285.

Pulyk, O. R., Giryavets, V. M. (2006). Пулик О. Р., Гирявець М. В. Методичні рекомендації для самопідготовки до семінарських занятьтлікарів за фахом “загальна практика - сімейна медицина”. Ужгород, 1-26.

Rožman, M., Treven, S., & Cingula, M. (2018). The Impact of Behavioral Symptoms of Burnout on Work Engagement of Older Employees: The Case of Slovenian Companies. *Naše gospodarstvo/Our Economy, 64(3),* 3-11. doi: 10.2478/ngoe-2018-0013

Schaufeli, W. B. (2003). *Burnout: An Overview of 25 Years of Research and Theorizing. Handbook of work and health psychology*. Chichester: John Wiley & Sons, 383–425. doi: 10.1002/0470013400.ch19

Semenova, E., Danilenko, K. (2010) Семенова Е. А., Даниленко К. В. Питтсбургский опросник на определение индекса качества сна (PSQI). Режим доступа: http://iimed.ru/assets/files/1/10%20PSQI-rus.pdf

Sharma, A. and Kashyap, N. (2017). The Influence of the Big Five Personality Traits on Burnout in Medical Doctors. *International Journal of Psychological Studies, 4(9)*, 13-23. doi: 10.5539/ijps.v9n4p13

Smyth, C. (2012). MSN, APRN, BC, ANP/GNP, Montefiore Medical Center. *Issue Number 6(1)*, 1-2.

Söderström, M., Jeding, K., Ekstedt, M., Perski, A., & Åkerstedt, T. (2012). Insufficient sleep predicts clinical burnout. *Journal of Occupational Health Psychology, 17(2)*, 175– 183. https://doi.org/10.1037/a0027518

Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the Job Satisfaction Survey. *American Journal of Community Psychology, 13(6)*, 693–713. doi: 10.1007/BF00929796

Stoyukhina, N. Y, Kostrigin, A. A. (2014). Стоюхіна, Н. Я. Костригин, А. А. Проблематика сна и сновидений в отечественной психологии на рубеже XIX-XX веков. *Приволжский научный весник.11(2)-39*, 62-66.

Sydorov, P. (2005). Сидоров П. *Синдром эмоционального выгорания*. Конспект врача. Режим доступа: http://www.psi-test.ru/pub/1/Sidorov-Sindrom-vygoraniy.html

Talachi, R. K. and Gorji, M. B. (2013). Job Burnout and Job Satisfaction among Industry, Mine and Trade Organization Employees: A Questionnaire Survey. *International*

Journal of Academic Research in Business and Social Sciences, 7(3), 21-41. doi: 10.6007/IJARBSS/v3-i7/7

Udovik at al., S. V. (2018). Удовик С., Молокоедов А., Слободчиков, И. *Эмоциональное выгорание в профессиональной деятельности*. ООО "Левь"1-343.

Vandekerckhove, M., Kestemont, J., Weiss, R., Schotte, C., Exadaktylos, V., Haex, B., Verbraecken, J., & Gross, J. J. (2012). Experiential versus analytical emotion regulation and sleep: Breaking the link between negative events and sleep disturbance. *Emotion, 12(6)*, 1415–1421. doi: 10.1037/a0028501

Vanheule, S. (2003). 'Slave labor and mastery': A psychoanalytic study of professional burnout. *Faculteit Psychologie en Pedagogische Wetenschappen*, 1-163. Retrieved from: https://core.ac.uk/download/pdf/55719336.pdf

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders clinical descriptions and diagnostic guidelines*, 1-332. Retrieved from: https://apps.who.int/iris/handle/10665/37958

World Health Organization. (2019). *Burn-out an "occupational phenomenon": International Classification of Diseases*. Retrieved from: https://www.who.int/mental_health/evidence/burn-out/en/

Yip B. & Rowlinson S. (2009). Job Burnout among Construction Engineers Working within Consulting and Contracting Organizations. *Journal of management in engineering, 3(25),* 122-130. doi: 10.1061/(ASCE)0742-597X(2009)25:3(122)

Ziaei, M. et al. (2015). Ziaei M., Yarmohammadi H., Moradi M., Khandan M. Level of Workload and Its Relationship with Job Burnout among Administrative Staff. *Int J Occup Hyg. 7(2),* 53-60.

APPENDIX 1

Information about the respondents

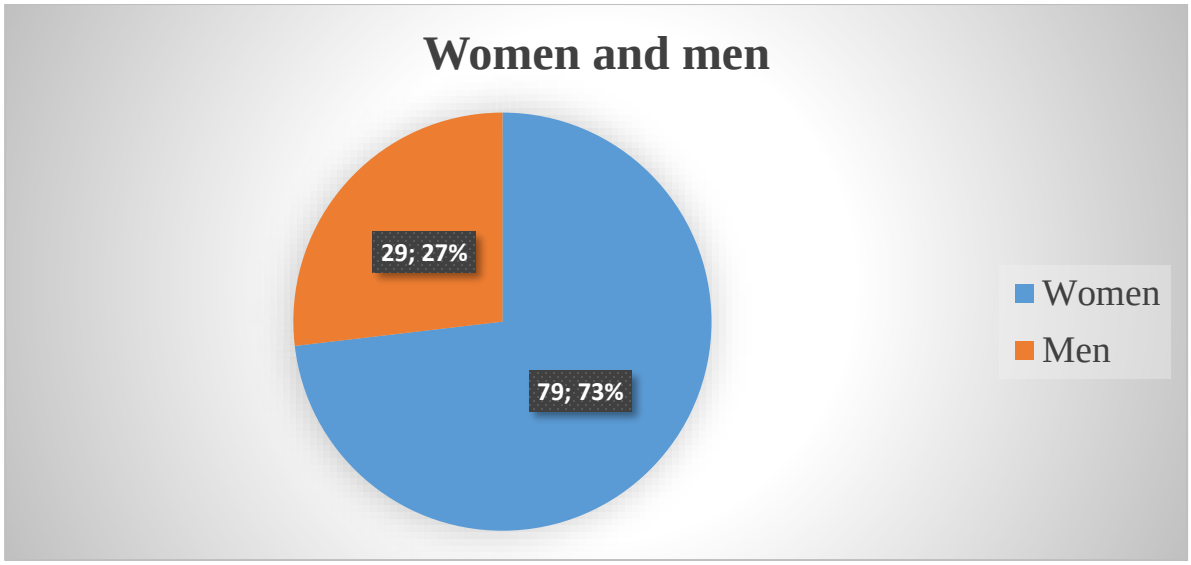


Figure 1. The number of respondents who took part in the research.

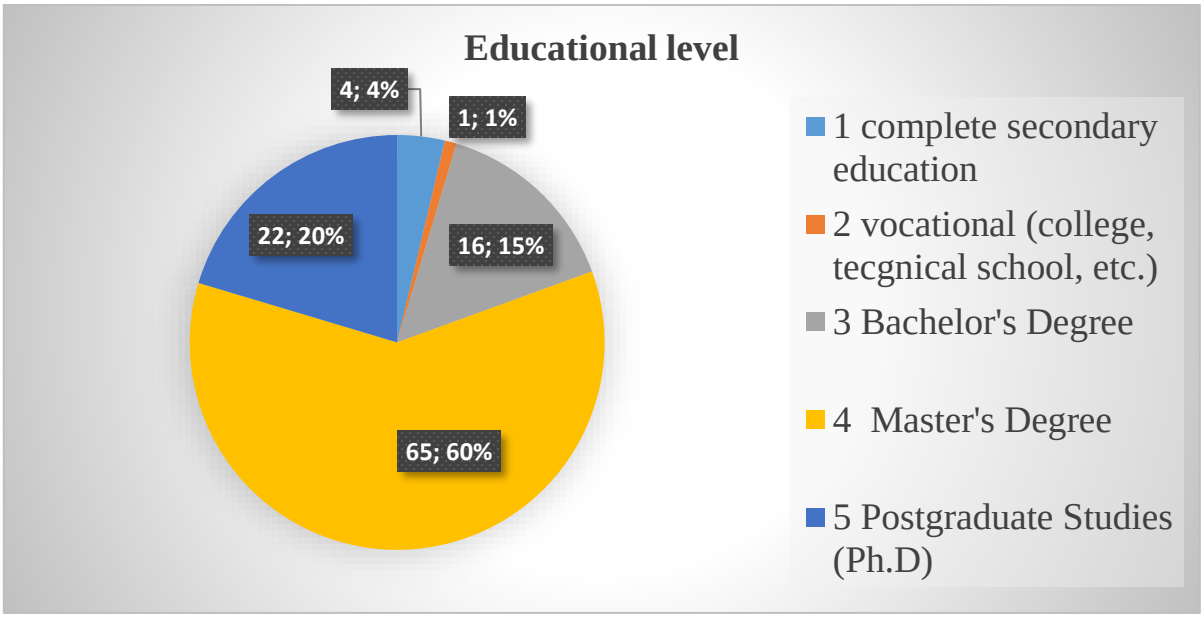


Figure 2. The educational level of respondents who participate in the research

Table 1. Job titles of the members of research group

Job title	Number of participants
University staff (lecturers +assistants)	17+4
IT professionals	16
Management (managers of different fields)	14
Governmental bodies (civil servants)	7
School staff (teachers, tutors)	6
Researchers and scientists in different fields (inc. Ph.D)	5
Designers	4
Entrepreneurs (individual entrepreneur)	4
Project assistants (inc. UNIDO)	4
Lawyers	3
Sales persons	3
Financiers	2
Psychologists	2
Analysts	2
Accountants	2
Journalists	2
Engineers	2
Service department employees	2
Doctors	1
Hair dresser	1
Communication specialist	1
Tailor	1
Tato master	1
Creative industries	1
Logistics	1
Total number of participants:	108

Table 2. The number of employees who work in the companies of different volume

Company with the number of	1 to 10 employees	10-50 employees	50-100 employees	100+ employees	Total number
The number of employees	20	24	9	55	108

Table 3. The sleep schedule of people who took part in the research

Hours of going to bed	Before 22.00	22.00-23.00	23.00-00.00	00.00-01.00	After 01.00	Total amount of participants
The number of respondents	4	21	33	33	17	108

APPENDIX 2

Table 1. Differences of sleep characteristics of people with different burnout level (the results of One-way ANOVA test)

Variable	Analysis of Variance (results_eng) Marked effects are significant at p < ,05000							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
goes to bed: 0 - before 22, 1 - 22-23, 2 - 23-00, 3- 00-01, 4-after 01	3,5886	2	1,7943	121,04	105	1,1528	1,55650	0,215699
time to fall asleep	472,5259	2	236,2630	14213,55	105	135,3671	1,74535	0,179610
wakes up: **0 - before 6, 1- 6-7, 2- 7-8, 3- 8-9, 4- after9**	0,8913	2	0,4456	118,03	105	1,1241	0,39645	0,673709
hours of sleep	2,0703	2	1,0352	112,16	105	1,0682	0,96909	0,382796
sleep problems	337,7143	2	168,8572	1992,61	105	18,9772	8,89788	0,000269
sleep quality 1-bad 5-excellent	17,0861	2	8,5431	61,88	105	0,5893	14,49689	0,000003

Table 2. Differences of personality traits of people with different burnout level (the results of One-way ANOVA test)

Variable	Analysis of Variance (results_eng) Marked effects are significant at p < ,05000							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
JSS	17,2823	2	8,64114	36,717	105	0,34968	24,71139	0,000000
neuroticism	94,4068	2	47,20338	1023,556	105	9,74815	4,84229	0,009737
extraversion	56,1488	2	28,07441	1771,851	105	16,87477	1,66369	0,194393
openness to experience	38,1212	2	19,06062	1441,953	105	13,73288	1,38795	0,254126
agreeableness	9,1043	2	4,55215	1221,748	105	11,63569	0,39122	0,677211
conscientiousness	147,8502	2	73,92510	1115,066	105	10,61968	6,96114	0,001449

Table 3. Differences of job satisfaction of people with different burnout level (the results of One-way ANOVA test)

Variable	Analysis of Variance (results_eng) Marked effects are significant at p < ,05000							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Pay	24,87586	2	12,43793	125,3533	105	1,193841	10,41841	0,000075
Promotion	27,04151	2	13,52076	130,7617	105	1,245350	10,85699	0,000052
Supervision	10,58515	2	5,29258	82,1070	105	0,781971	6,76825	0,001719
Fringe Benefits	13,29594	2	6,64797	106,6207	105	1,015435	6,54692	0,002092
Contingent rewards	19,88881	2	9,94440	136,6112	105	1,301059	7,64332	0,000796
Operating conditions	11,93301	2	5,96650	112,2036	105	1,068605	5,58345	0,004961
Coworkers	14,29086	2	7,14543	80,7346	105	0,768901	9,29304	0,000192
Nature of work	33,60039	2	16,80019	80,8348	105	0,769855	21,82253	0,000000
Communication	11,72681	2	5,86341	117,0973	105	1,115212	5,25766	0,006666
JSS	17,28228	2	8,64114	36,7167	105	0,349682	24,71139	0,000000

APPENDIX 3

The self-assessed inventory of subclinical burnout (V. Dudiak)

For each statement that relates to your work, please indicate to what extent you agree or disagree with it. Use the following scale for evaluation: 1 - strongly disagree, 5 - strongly agree.

Please make sure you rate each of the statements.

1. Reluctance to go to work.
2. Frequent lateness.
3. Postponement of work-related meetings.
4. Loneliness, unwillingness to see colleagues.
5. Reluctance to see people you work with.
6. Reluctance to carry out organizational work.
7. Formal performance of duties.
8. Loss of sense of humor.
9. Constant feeling of failure, guilt, self-blame.
10. Increased irritability.
11. Feeling picky on the part of others.
12. Indifference.
13. Powerlessness, emotional exhaustion.
14. Depressed mood.
15. Thoughts about work stoppage or change of its direction.
16. Poor concentration, distraction.
17. Rigidity of thinking, use of stereotypes.
18. Doubts about the usefulness of your performance.
19. Disappointment with the line of action.

20. Cynical attitude towards colleagues and other partners.
21. The preoccupation with personal problems.
22. Sleep disorders (insomnia / sleepiness).
23. Change in appetite (absence / "overeating").
24. Long-term unknown diseases.
25. Predisposition to infectious diseases.
26. Rapid physical fatigue.
27. Headaches, problems with the gastrointestinal tract.
28. Exacerbation of chronic diseases.

Behavioral aspect (1-7), affective (8-14), cognitive (15-21), physiological (22-18)

APPENDIX 4

Author's inventory based on the Pittsburgh Sleep Quality Index

1. At what time did you usually go to bed for the last 2-3 months?

before 22-00;

- 22-00 – 23-00;
- 23-00 – 00-00;
- 00 – 01-00;
- after 01-00;

2. How much time (minutes) did you usually need to fall asleep in the last 2-3 months? Specify one number to indicate the approximate number of minutes, for example, 30

_____

3. At what time did you usually wake up in the last 2-3 months?

before 06-00;

- 06-00 – 07-00;
- 07-00 – 08-00;
- 08-00 – 09-00;
- after 09-00;

How many hours on average have you slept per night in the last 2-3 months? (The number of hours may differ from the amount of time spent in bed). Specify one number that will indicate the approximate number of hours, for example, 7.

_____

5. If not for work and / or other responsibilities, would you (choose anything that characterizes you):

- went to bed earlier;
- went to bed later;

- would get up earlier;
- would get up later;
- did not change anything in their own sleep mode;

6. Your usual general feeling after waking up for the last 2-3 months is:

- rested;
- not rest;

7. Your usual emotional background after waking up in the last 2-3 months is:

- Fatigue, drowsiness;
- Anger, irritability;
- Joy, exaltation;
- Other: _____

8. Do the events of the past day usually affect the quality of your sleep? (specify everything that applies to you)

- yes, determine the ability to fall asleep;
- yes, determine the quality of sleep (depth, feeling after waking up);
- yes, determine the meaning of dreams;
- no, do not affect in any way;

9. Over the last 2-3 months, how often have you had trouble sleeping because you ...

	Never during this period	Less than once a week	Once or twice a week	Three or more times a week
1. could not sleep for 30 minutes				
2. woke up in the middle of the night or in the morning				
3. were forced to get up to use the bathroom				
4. could not breathe freely				

5. coughing or snoring loudly				
6. froze (felt cold)				
7. felt hot				
8 saw bad dreams				
9. felt pain				

Over the past 2-3 months, how often have you had trouble sleeping because there was some other reason (other reasons) not listed above. Please specify

_____

10. How would you describe the quality of your sleep over the last 2-3 months?

	1	2	3	4	5	
unsatisfactorily						satisfactorily

11. In the past 2-3 months, how often have you taken medications that help you fall asleep?

- Never during this period;
- Less than once a week;
- Once or twice a week;
- Three or more times a week;

12. Do you have a partner with whom you share a bed, or a roommate, for the last 2-3 months?

- No, I live alone in the room
- The partner / neighbor lives in another room
- Partner / neighbor in the same room, in another bed
- We share one bed (with a partner)

13. Do you usually remember dreams?

- Yes
- No

14. For the last 2-3 months, your dreams are mainly:
    - positive content
    - negative content
    - 50-50
    - I can't think of any during this period