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**THE PSYCHOSOCIAL WORKING CONDITIONS AS  
PREDICTORS OF OCCUPATIONAL BURNOUT IN DENTISTS**

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***Abstract***

The continuous development of society and civilization has caused working places and conditions to change making occupational stress one of the most serious challenges concerning health. In defining the working environment as a source of stress, one can take into account subjective and objective factors that affect the individual's professional life. The phenomenon of occupational burnout plays a significant role in this context. This study was conducted in 2015-2016 and 80 dentists aged 26-66 years old participated in the study. The Psychosocial Working Conditions (PWC) scale, consisting of 5 scales; Requirements, Control, Social Support, Welfare, and Desired Changes as well as the Occupational Burnout Syndrome Questionnaire (OBSQ) distinguishing 3 dimensions of occupational burnout: emotional exhaustion, depersonalization and depreciation of personal achievements were utilised as measures to obtain the data for this study. The findings showed that the distribution of results of variables requirements (R), depersonalization and depreciation of personal achievements significantly differ from normal distribution. Analysis of these variables show that the dentists obtained above average results on the scale of requirements (R) while for depersonalization the results are below average. The findings revealed that the predictors of emotional exhaustion are the sense of well-being and posed requirements. Studies have shown that emotional exhaustion can be predicted on the basis of the high requirements perceived by Łodzińska (2010) posed by work and poor welfare, while the tendency for depersonalization and depreciation of personal achievements can be predicted on the basis of observable physical and mental symptoms of a lowered welfare.

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## 1. Introduction

The concept of stress has been in use for 88 years, when this phenomenon was defined for the first time by Hans Selye (Selye, 1960; Oniszczenko, 1993) as a non-specific reaction of the organism in response to external requirements. It can be assumed that stress is a process associated with threat which environmental factors bring to the body's balance or violate it, and through which the body responds to the threat (Gatchel, Baum, & Krantz, 1989). If we apply this phenomenon to the reaction of the body in the workplace, we can refer to occupational stress.

Constant and dynamic economic and social development have caused places and conditions of work to change. In the last 20 years, occupational stress has become one of the most serious challenges in the field of health and safety in the workplace. Burnout can occur in workers of every sector of the economy and in an organization of any size (Łodzińska, 2010). In the work environment, psychosocial stress factors increase in tandem with the problems to which both the employer is exposed to in terms of conditions related to market economy (employment costs, customer needs, small demand or increasing competition) and the employee (increase in requirements, availability). More and more often, the individual is also unable to meet the increasingly higher requirements which occur too frequently, are too high or last too long. The pressures of time, job insecurity, improper management of the company, too much responsibility, difficult relations prevailing in the team and inadequate organization of work can lead to chronic stress, which after some time can cause major changes in the physical and mental health of workers. Stress at work occurs most often when the requirements are inadequate to the capabilities of workers and employers. Occupational stress can also be worsened by critical life events such as divorce, illness or death of a loved one. The reactions of different people to stress in similar work conditions may vary, for they depend on a number of constitutional factors, such as temperament or adaptability skills. Particularly vulnerable to feeling stressed in the work environment are people who are ambitious, dominant, hypersensitive, impatient and working in social occupations, which are determined by close contact with another human being (Świdorski, 2006).

In defining the working environment as a source of stress, one should take into account both the subjective and objective factors that affect the individual in the workplace. Subjective factors relate to motives of employment taken up in a given field, professional responsibilities, attitudes towards the profession performed, professional environment and the degree of satisfaction with the work carried out. Objective factors are related to the social and physical working conditions. The first refer to a holistic approach to issues concerning the organization of work, system of remuneration, social relationships, opportunities for professional development and advancement, while the second relate to external factors of work such as noise, lighting, etc. (Ogińska-Bulik, 2006).

The phenomenon of occupational burnout, associated with stress in the workplace, was first described by Herbert Freudenberg in 1974 as "the state of fatigue and frustration resulting from sacrifice to some cause, way of life or relationship, which did not bring the expected reward" (Sęk, 2009, p. 89). The author highlighted the symptoms affecting people with occupational burnout syndrome, such as severe headaches, insomnia or a tendency to react angrily. Christina Maslach (1994) defines the phenomenon of occupational burnout as a syndrome of emotional exhaustion, depersonalization, and a reduced sense of personal achievements, which can occur in people who work with other people in a

certain way. According to Maslach (1994), emotional exhaustion is connected with the subjective perception of fatigue and exhaustion of resources. People who feel emotional exhaustion do not recognize the possibility to recuperate, at the same time they feel professionally exploited, which is conducive to loosening emotional ties with co-workers and clients. This leads to depersonalization, or cognitive and emotional distancing from work and related persons. Another criteria of occupational burnout, distinguished by Maslach (1994) – a reduced sense of personal achievements – is related to the standards of work set and accepted by the individual. The feeling that the requirements are too high, and failing to meet them, as a result of emotional exhaustion, leads to the negative assessment of professional achievements and one's own competences. According to Maslach (1994), with well-defined task, exhaustive, emotionally exhaustive work and work that places overly high or low requirements before the employee may be the source of the organism's reaction known as burnout.

In recent years, the dominating trend in studies on the causes of this phenomenon is Robert Karasek's (1979) concept focused on requirements and control (cited in Ogińska-Bulik, 2006). Control refers to the possibility of making decisions. On the basis of a set of various degrees of requirements and control, he distinguished four types of situations: 1) high requirements – low range of control, 2) high requirements – large range of control, 3) low requirements – small range of control, and 4) low requirements – large range of control. A source of strong stress for an employee is the first type of situation (high requirements – low range of control); the need to perform a very difficult task while having no impact on the method of its realization, which may result in strong psychophysical tension leading to psychosomatic symptoms and depression. The second type of situation distinguished by Karasek (high requirements – large range of control), thanks to the possibility of the employee to modify the method of action while performing a difficult task, is conducive to his possible development, while the third type of situation (low requirements – small range of control) is conducive to a passive attitude of an employee, who has no opportunity for development. The least tension affecting an employee may emerge in the fourth type of situation (low requirements – large range of control). The situation when an employee can have an impact on how to respond when performing tasks of a small or moderate level of difficulty involves the least risk of strong emotional tension occurring. Hall, Johnson, Watt, Tsipa, & O'Connor (2016) expanded Karasek's concept by a third situation – social support. According to Hall et al (2016), in a situation when high requirements are accompanied by a low level of control and lack of social support, the individual feels the strongest stress.

## **2. Purpose of the Study**

The purpose of the study was to investigate occupational burnout syndrome could be predicted by psychosocial working conditions in a group of dentists and certain sociodemographic variables. The study was undertaken to provide more insight into an occupation that is not well researched in this area.

## **3. Research Questions**

3.1. Do factors related to the subjective assessment of psychosocial working conditions predict occupational burnout syndrome in a group of dentists?

3. 2. Does age, seniority and sex of dentists predict occupational burnout syndrome?

## **4. Research Methods**

### **4.1. Study Participants**

The study was conducted from November 2015 to September 2016. The sample were 80 dentists between the age of 26-66 years old (M=41.75; SD=9.23) including 18 men aged 31-66 years old and 62 women aged 26-61 years old. The seniority of people surveyed ranged from one to 40 years (M=16.60; SD=9.29). Women were active professionally from one to 37 years (M=15.79; SD=9.38) and men 6-40 years (M=19.39; SD=8.63). Most of the respondents declared no specialization (45%) or general specialisation (33.75%).

### **4.2. Research design and Measures**

We decided to examine dentists as there is scarce integrated knowledge about psychological problems of people in this profession. The level of stress is high during work and the authors felt that there is a need for further investigation into this profession to get some new knowledge to the practice. The research was conducted in Poznan and Gorzów Wielkopolski area. The information about the research was presented in a scientific paper and as advertisements were put on every dentists' ambulatory at the area of Gorzów and Poznan. The participants answered the call for the research. They participated as volunteers in the study.

The following measures were used to elicit the data.

#### **4.2.1. Psychosocial Working Conditions Questionnaire**

Karasak's dimensions formed the basis for Widerszal-Bazyl and Cieślak (2000) to create the questionnaire Psychosocial Working Conditions (Ogińska-Bulik, 2006). The questionnaire consists of five scales:

- a) Scale of requirements – What requirements does your job pose?
- b) Scale of control – To what extent can you influence what happens at work?
- c) Scale of social support – What kind of support and assistance can you count on?
- d) Scale of welfare – How do you feel?
- e) Scale of Desired changes – Do you expect any changes at work?

Each scale consisted of 25, 20, 16, 22 and 19 items respectively. Answers provided by the respondents were assigned values from 1 to 5. For 69 items of the questionnaire, the recoding procedure was used. Thanks to this, after averaging the answers to items making up individual scales, high scores indicate a high level of requirements, control, perceived social support, welfare and desired changes at work.

#### 4.2.2. Occupational Burnout Syndrome Questionnaire

The questionnaire designed by Agnieszka Kotowicz-Gears, Marek Bładowski and Patrycjusz Reszczyński was used (Kotowicz-Gears, Bładowski & Reszczyński, 2012) to measure occupational burnout syndrome. The questionnaire consists of 27 items based on a 5 point Likert response scale from 1 (definitely not/not applicable) through 3 (no changes) to 5 (definitely yes).

Based on Maslach, 3 dimensions were extracted making up occupational burnout syndrome: emotional exhaustion, depersonalization, and demotion of personal achievements (Chirkowska-Smolak, 2009). Each of the three dimensions comprised 14, 4 and 6 items, respectively. The higher points respondents earn in individual scales reflect greater emotional exhaustion and depersonalization, and demotion of their personal achievements.

#### 4.3. Data analysis

Statistical analysis was carried out using IBM SPSS Statistics 21PL. In order to determine the prediction of occupational burnout syndrome based on the subjective evaluation of psychosocial working conditions, a series of hierarchical analyses of regression were carried out using the stepwise method, introducing into the model in the first block, the psychosocial working conditions scale, and in the second block side variables such as age, seniority and sex of respondents. The value  $p < 0.05$  was established to assess the level of significance of predictors.

### 5. Findings

The results are presented in the tables below. Table 1 shows the descriptive statistics of the assessment scales of psychosocial working conditions and factors of occupational burnout syndrome, as well as the results of the Kolmogorov–Smirnov test, examining the distribution of variable results in relation to normal distribution.

The Kolmogorov-Smirnow's test shows that only the distribution of results of variables requirements, depersonalization and depreciation of personal achievements significantly differs from the normal distribution. Analysis of the distribution of the result of these variables shows that the respondents obtained above average results on the scale of requirements ( $p = 0.039$ ). This suggests that the requirements in this occupational group are felt as high. The results of depersonalization for this group are distributed below average. This suggests that the sample do not show a tendency for emotional and cognitive distancing to their job. The results of depreciating personal achievements revealed a concentration around average values. This can attest to the moderate tendency for this dimension.

**Table 01.** Descriptive statistics of scales measured by the Psychosocial Working Conditions questionnaire and dimensions of Occupational Burnout Syndrome questionnaire

Variables	N	Min.	Max.	Me	M	SD	K-S	p
Requirements	80	2.88	4.29	3.74	3.67	0.34	0.102	0.039
Control	80	2.75	4.85	4.05	3.99	0.46	0.076	0.200
Social support	70	1.00	5.00	3.50	3.40	1.10	0.098	0.094
Welfare	80	2.27	4.64	3.66	3.58	0.53	0.091	0.097

Need for changes	80	1.15	4.05	2.46	2.57	0.75	0.089	0.183
Emotional exhaustion	80	21.00	82.00	46.00	49.11	14.67	0.097	0.063
Depersonalization	80	8.00	33.00	12.00	13.86	5.41	0.189	0.000
Depreciation of personal achievements	80	9.00	26.00	17.00	17.26	4.02	0.151	0.000

As part of the search for answers to the research questions posed, a hierarchical regression analysis was carried out using the stepwise method, the results of which are presented in table 2. It was arbitrarily decided to introduce to the first block in the regression model, a scale relating to the subjective assessment of psychosocial working conditions, and in block 2 – the controlled side variables, i.e. age of respondents, seniority and sex. It turned out that none of the side variables affected the model as a significant predictor.

**Table 02.** Predictors of Occupational Burnout Syndrome in dentists introduced to the model of stepwise regression method as significant

Predictors	Variables explained					
	Emotional exhaustion		Depersonalization		Depreciation of personal achievements	
	B	Beta	B	Beta	B	Beta
Constant	96.91		31.57		34.18	
Requirements	8.26	<b>0.197**</b>	-	-	-	-
Control	-	-	-	-	-	-
Social support	-	-	-	-	-	-
Welfare	-21.89	<b>-0.811***</b>	-5.01	<b>-0.525***</b>	-4.75	<b>-0.646***</b>
Need for changes	-	-	-	-	-	-
R <sup>2</sup>	0.73		0.28		0.42	
Corrected	0.72		0.27		0.41	
F	90.93***		25.84***		48.72***	

Significant predictors of emotional exhaustion turned out to be welfare ( $\beta=-0.81$ ;  $p<0.001$ ) and requirements ( $\beta=0.20$ ;  $p<0.01$ ). This model explains 72% of the variance. The obtained values of coefficients indicate that people who feel a low welfare (headaches, weakness, the severity of feeling negative emotions) and see requirements set by work as high, feel emotional exhaustion to a greater extent.

While depersonalization ( $\beta=0.53$ ;  $p<0.001$ ) and demotion of personal achievements ( $\beta=0.65$ ;  $p<0.001$ ) can be predicted only on the basis of welfare. These models explain 27% and 41% of the variance, respectively. The obtained values of coefficients can be interpreted as follows: people feeling low welfare (headaches, depressed mood, the severity of negative emotions) show a greater tendency to emotional and cognitive distancing from work (depersonalization) and a greater tendency to demote their personal achievements.

Emotional exhaustion in this group of dentists can be predicted on the basis of the high requirements perceived by them set by the nature of their work and low welfare, understood as the

occurrence of physical symptoms (e.g. headache, weakness, nausea, etc.) as well as less satisfaction with oneself, one's life, work and the presence of negative emotional states.

The tendency for emotional and cognitive distancing to work (depersonalization) and tendency to demote personal achievements in the group of dentists studied can be predicted on the basis of observed physical and mental symptoms of reduced welfare (headaches, weakness, less satisfaction with oneself, one's life, work and negative emotional states). It worth to state that dentists assess the requirements set by work as high. Participants display a low tendency for emotional and cognitive distancing in relation to their work. The dentists in examined group, to a moderate degree, are characterized by a tendency to demote personal achievements.

## 6. Conclusion

According to the results obtained, the prediction of emotional exhaustion based on the requirements set by work is consistent with the assumptions adopted by Karasek (Ogińska-Bulik, 2006). Control turned out to have no significance in predicting emotional exhaustion in dentists. This result seems to be consistent and have a relationship with the specificity of work of this occupational group. On the one hand, the work of a dentist requires constant training, and the schedule of visits of almost every dentist is filled well in advance, which may indicate that the person engaged in this profession perceives it as one that sets high requirements. On the other hand, the specificity of the profession requires making independent decisions on the manner of treatment. Hence, one can assume that dentists see their job as one that sets high requirements, while at the same time providing great freedom in its performance, which concurs with Karasek (Ogińska-Bulik, 2006). The result shows that people who develop some personal skills and interest feel more satisfied in the job of a dentist.

Another predictor, which appeared in the regression models carried out in this study is welfare. In predicting emotional exhaustion it turned out to be a stronger predictor than requirements, and in the case of depersonalization and demotion of personal achievements, it was the only significant predictor. The authors of the questionnaire for measuring Psychosocial Working Conditions with variables, introduced requirements, control and social support, based on Karasek and Jonson and Holl's (Ogińska-Bulik, 2006) assumptions of dimensions of welfare and the need for changes at work. Considering that, in accordance with the definition, welfare consists of a general self-assessment of physical health and somatic symptoms, as well as assessment of mental well-being (negative/positive emotional states, satisfaction with oneself, life and work). It can be noted that this dimension converges at the theoretical level with emotional exhaustion according Maslach's concept (Chirkowska-Smolak, 2009). An additional confirmation of the theoretical convergence of emotional exhaustion and welfare may be the high percentage of explained variance (72%) in the model measuring prediction of emotional exhaustion. Thus, the result obtained confirms Maslach's assumption that the source of depersonalization is emotional exhaustion, which in turn translates to the demotion of one's own achievements (Chirkowska-Smolak, 2009).

The age of dentists, their seniority and sex were found to be statistically insignificant in predicting factors associated with occupational burnout.

Most of the research conducted so far in this area show results treating variables categorically (e.g. % of people with a low, average or high score), or by performing correlative comparisons (Kotowicz-Gears, Bladowksi, & Reszczyński, 2012; Makowska, 2014). That is why it is difficult to relate the results of the regression analyses in this study to other study results on a 1:1 basis. However, it is worth noting the obtained strong, negative correlations (from -0.54 to -0.80;  $p < 0.01$ ) in Makowska's (2014) studies, between the welfare dimension and factors of occupational burnout. These results can be considered as additional reinforcement, support explanation relating to the convergence of theoretical emotional exhaustion according to Maslach (Chirkowska-Smolak, 2009) and welfare according to Widerszal-Bazyl and Cieślak, (2000).

By analyzing the distribution of the results of factors measuring occupational burnout, attention should be paid to the right-skewed tendency of the depersonalization dimension and on the concentration of results around average values of the demoting personal achievements dimension. This may attest to the fact that dentists do not show a trend to treat patients in a cynical, objective way, and to a moderate degree, they tend to diminish their own achievements. The lack of a tendency for emotional distancing from the patient in this occupational group may result from the high degree of predictability accompanying this work (patients are scheduled, fixed working hours) and less emotionally charged than the case of, for instance, a paramedics, fire fighters or police officers, who must often deal with life threatening situations and who are burdened with the responsibility for caring about the lives of others.

Studies concerning occupational burnout among nurses conducted by Dębska and Cepuch (2008) showed that they were affected by the intensity of all three factors that contribute to occupational burnout below the theoretical average, which is low intensity of these symptoms. These results were obtained from a group of family nurses from rural centres; showing that some occupations are less burdened by the risk of occupational burnout than say, paramedics, nurses working on operating blocks, and so on. Their work, like the work of a dentist, is characterized by greater predictability resulting from regular working hours, scheduled patients, and so on).

The problem connected with occupational burning in various occupational groups is very important both from the point of view of individuals and organizations employing workers. Therefore, this study should be replicated in order to confirm (or not) the direction of the results obtained and to continue to expand the research in this area, through the comparison of different occupational groups, e.g. dentists with doctors of other specialities, paramedics, and so on.

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