



Can family resources and place of residence play a beneficial role in explaining burnout levels in working men?

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Abstract

Introduction and Objective. The phenomenon of occupational burnout is a common factor affecting employees' health. In a study on occupational burnout it may happen that variables that are not among the main predictors of burnout can noticeably affect burnout and the main independent variables. The aim of this study was to verify hypotheses about the role of demographic variables in explaining levels of stress and burnout, based on the example of men working as firefighters and 112 emergency operators.

Materials and Method. A total of 823 men employed as firefighters and 112 emergency number operators were surveyed. The study applied the LINK Occupational Burnout Questionnaire, the PSS-10 Perceived Stress Scale and a demographic questionnaire. It was followed by an analysis of covariance of qualitative variables and quantitative predictors (ANCOVA).

Results. The study showed that living in rural areas was associated with lower levels of burnout among the men in the examined group. A similar relationship was detected for marital status, having children and secondary education. The other main variable, the level of perceived stress and age, showed typical associations with occupational burnout.

Conclusions. The search for the causes of occupational burnout should not be narrowed only to stressors related to the demands of the workplace. Demographic variables are important elements of an employee's non-work environment and often a source of personal strengths. However, it should be remembered that the same factor can have both a protective function as well as a source of additional stress.

Key words

burnout syndrome, perceived stress, men, place of residence, marital status, having children, 112 emergency casll operators, firefighters

INTRODUCTION

The phenomenon of occupational burnout is a factor affecting employees' health. It occurs in an employed person as a result of chronic work stress that has not been effectively prevented [1]. According to the World Health Organization, in 2021, 300 million employed people worldwide suffered from work-related disorders [2]. In the same year in Poland, 75% of employees from a group of 1,086 people working in 293 companies reported the presence of burnout symptoms [3]. The consequences of burnout can include various somatic and mental disorders and diseases [4]. As chronic occupational stress is frequently the main cause of burnout, in burnout prevention it is important to recognize the causes of stress and factors that may protect employees against it. In addition to stressors present in the workplace, those typical of a particular employee that account for their relationship with the work environment may contribute to the development of burnout. These include personal characteristics, demographic variables and work-related attitudes, and their importance may change over the course of work, raising or lowering the risk of burnout (e.g., seniority) [5, 6]. The same factor can have both a protective function and as well as a source

of additional stress (e.g., marital support and work-home conflict). The importance that a job has for an employee may depend on additional factors, such as occupational prestige, gender, education or age.

Marriage is an important source of emotional intimacy, companionship and social support for both men and women. Married couples generally enjoy better physical and mental health, lower mortality rates, and engage in healthier behaviors than unmarried individuals [7]. They benefit from resources that improve health and well-being, with each partner contributing their own support network into the relationship, thus increasing the number of people ready to help in an emergency. Marriage, as an institution, involves norms and expectations that provide a sense of security and regulate the spouses' interactions. Being married has a positive impact on social status and provides legal and financial benefits, reduces relationship insecurity, and is sometimes a source of importance and identity for the spouses [8]. Research findings indicate that marriage has a positive causal effect on mental health [9].

A natural consequence of living in a relationship is parenthood. The presence of children is regarded as a source of family and social support because it accounts for establishing and deepening social relationships connected with having offspring [10]. Parenthood and being married were significant factors co-occurring with low levels of occupational stress in a large group of occupational therapists of both genders

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[11]. In another study conducted in the same occupational group, statistically significant differences were observed in the level of emotional exhaustion and a decrease in the sense of personal achievement between employees with and without children [12]. Parents are characterized by higher levels of empathy and tend to enjoy life more, which may protect them against stress and occupational burnout [13]. At the same time, however, having children and being in a marital relationship can also be stressful. This is often the case when there is not enough time for mutually satisfying contact between the spouse and the child [14].

The level of education is not often included in models explaining the phenomenon of job burnout. Arguably, the compatibility of the level of education with the requirements of the workplace and the expectations of those employed plays an important role here. In a study of social workers, those with higher education were more satisfied with work, as higher education was followed by a higher degree of professional autonomy [15]. Postgraduate nurses experienced lower levels of occupational stress compared to their undergraduate counterparts [16]. The discrepancy between professional effort and the reality, which negatively verifies the employee's professional expectations, is considered to be one of the main risk factors for the development of burnout. According to scientific publications, people with higher education may perceive work differently than less educated people. Higher education may be followed by the pressure of exorbitant career expectations and life plans [17]. Therefore, such education can be both a protective factor and an additional stressor for an employee.

There are a number of programmes designed to protect an employee from the negative effects of occupational stress and burnout [18]. Employee-focused intervention training usually helps to deepen professional competence and coping skills, it expands social support networks, and teaches relaxation techniques. Such widely-promoted pro-health activities (e.g. physical activity, diet, controlled consumption of stimulants) prevent the negative effects of life stress. In stress prevention, a growing role is also played by the place of residence as it provides an opportunity to relax and slow down the pace of life. The best idea is to live in rural or suburban areas, which lower the cost of living compared to city life, facilitates close contact with nature and promotes a calmer rhythm of life. It also positively affects the quality of sleep due to less noise and lower light levels. Living in the countryside, it is easier to establish and maintain social contacts and form supportive social relationships. Such a way of life is conducive to developing the ability to empathize. This is the result of deeper contact with animate and inanimate nature [19].

The relationships linking the described variables to burnout are not universal and are not confirmed in all studies. One reason for this may be the specifics of the occupation and the employee's gender. In studies conducted in different occupational groups, differences can be observed in the gender-related associations linking workload to stress, which concern the level of perceived stress [20, 21] and expectations of organizational support. Men are believed to be at higher risk of burnout due to high levels of occupational stress associated with quantitative work demands, and because they lack sufficient control over their job responsibilities [22]. For this reason, it was decided to include the male gender in the analysis of the current study.

The study presents the results of a project on the phenomenon of burnout in occupations that are particularly emotionally taxing. In research on occupational burnout, it may happen that variables that are not among the main predictors of burnout (so-called co-variables) can affect burnout as well as the main independent variables. In addition, depending on the theoretical model adopted, they can act as both predictors and protective factors.

OBJECTIVE

The aim of our study was to verify hypotheses about the role of demographic variables in explaining levels of stress and burnout based on the example of men working as firefighters and emergency operators. Both of these occupational groups are among the professions characterized by a high incidence of burnout among employees [23, 24]. Finding significant relationships would allow for a better match between organizational resources of the workplace and personal resources of employees.

MATERIALS AND METHOD

The analysis included a group of 580 active firefighters and 243 emergency number operators. The average age of men in the study group was 34.72 years (SD=7.65; min.=20, max.=60). The study group was dominated by married men – n=560 (68.04%), compared to unmarried men – n=17 (2.62%), and cohabiting men – n=85 (10.32%). The group was dominated by men with children – n=483 (58.68%). Of these, the largest number – n=252, had 2 children (43.44%). More men lived in urban areas – n=510 (61.96%) than in rural areas – n=308 (37.42%). In terms of education, slightly more men had secondary education – n=418 (50.78%), and fewer higher education – n=404 (49.08%).

Measurements. The level of occupational burnout was measured using the Polish version of the LINK Burnout Questionnaire (LBQ) [25]. The tool examines 4 dimensions of burnout: psychophysical exhaustion (PE), deterioration in social relationships (RD), level of professional inefficacy (PI), and employee's expectations of the work performed observed as disillusionment (DI). The questionnaire consisted of 24 items rated using a 6-point Likert-type scale (from 1='never' to 6='daily'). The LBQ provides 5 indicators, 4 of which relate to each dimension. The fifth is the LBQ^{INDEX} burnout index, which is the sum of the raw scores obtained on the 4 subscales of the questionnaire. The theoretical range of LBQ^{INDEX} is between 24–144 points. The number of standardized scores indicates the severity of burnout symptoms. In a Polish standardized group of uniformed services, Cronbach's α coefficients for each dimension reached: PE=0.81; RD=0.73; PI=0.56; and DI=0.85 [25]. In this study, the Cronbach's α coefficient was 0.59 for the PI subscale, while the PE, RD and DI subscales were 0.80, 0.70 and 0.84, respectively. The level of perceived stress was measured using the PSS-10 questionnaire [26], a tool used to assess cognitive aspects of stress and effectiveness of coping. It measures the degree of unpredictability of life situations, lack of control over them and a sense of overload. The questionnaire consists of 10 questions which the respondents answer using a 5-point

Likert-type scale (from 0 – ‘never’ to 4 – ‘very often’). The PSS-10 provides a single indicator as the number of standardized scores corresponds to the intensity of perceived stress. The Cronbach’s α coefficient in the standardized Polish sample was 0.86 [26]; in this study, the Cronbach’s α coefficient was 0.85. The study additionally used a survey questionnaire to collect demographic data.

Statistical analysis. The distribution of LBQ questionnaire scores was normal and symmetrical ($K=0.002$; $W=0.98$; $p<0.0001$, skewness= -0.09). The distribution of PSS-10 scores was also normal and symmetrical ($K=0.002$; $W=0.99$; $p<0.0001$; skewness= 0.32). Levene’s test for equality of variance was applied, followed by an analysis of covariance was on qualitative variables and quantitative predictors (ANCOVA). The dependent variable was the level of burnout, the main independent variable was the level of perceived stress, whereas the co-variables included marital status, number of children in care, place of residence, education and age range. For variables with heterogeneous variance, in order to detect differences between groups, a *post-hoc* analysis was conducted using Fisher’s NIR test. The statistical programme Statistica 13 (TIBCO Software, Inc., Warsaw, Poland) was used in the study.

RESULTS

Table 1 shows statistical characteristics of the variables analyzed in the study. Standardized scores for measuring burnout on the 4 dimensions were in the medium range (PE – 6 sten; RD – 5 sten; PI – 8 sten; DI – 6 sten). High scores (8 – 10 sten) in the PE dimension were obtained by 156 (18.95%) men, in the RD dimension by 114 (13.85%) men, in the PI dimension by 131 (15.91%) men, and by 77 (9.35%) men in the DI dimension. The standardized score for measuring perceived stress was at the medium level (5 sten), a high score (8 – 10 sten) was obtained by 83 (10.8%) men.

A theoretical model was created with the following variables: dependent variable – LBQ^{INDEX}; main independent variable – PSS-10; additional independent variable – age; first co-explanatory variable – marital status divided into 4 categories: single, cohabitation, first marriage, second marriage; second co-explanatory variable – education divided into 2 categories: secondary and higher education; third co-explanatory variable – residence divided into 2 categories: rural and urban. An empirical model was obtained which included the following co-variables in addition to the main and additional independent variable: number of children in care, single marital status, cohabiting marital status, first marriage, rural residence and high school education. Performing a model adequacy test with F-statistic revealed a good fit to the data $F(8,811)=28.048$; $p<0.001$. The multiple correlation coefficient R was 0.465. The model explained 22% of the variance in the level of burnout (Tab. 2).

Regarding marital status, the lowest mean value of LBQ^{INDEX} occurred in the group of men living in their first marriage 63.90pkt (SD =17.96), whereas the highest mean value occurred in the group of men living in cohabitation 78.01pkt (SD=15.52) (Fig. 1). A *post-hoc* analysis using Fisher’s NIR test showed that the mean obtained in the group of cohabiting men was significantly higher than that of the group of single men (NIR=0.000; $p<0.05$), the group of men living in their first marriage (NIR=0.000; $p<0.05$) and those living in their second marriage (NIR=0.048; $p<0.05$). In terms of the level of education, the lowest mean LBQ^{INDEX} value occurred among men with secondary education ($M=64.14$; $SD=18.58$), in contrast to men with higher education ($M=67.89$; $SD=17.91$) (Fig. 2). These values differed significantly (NIR=0.003; $p<0.05$). Place of residence was also associated with differences in LBQ^{INDEX} levels. Men living in rural areas scored lower ($M=59.63$; $SD=16.69$), compared to those living in urban areas ($M=69.75$; $SD=18.27$) (Fig. 3). The difference was statistically significant (NIR=0.000).

Table 1. Statistical characteristics of the studied group (N = 823)

LBQ ^{INDEX} M±SD	LBQ M±SD	PSS-10 M±SD	Age range n(% of the sample)	Marital status n (% of the sample)	No. of children n (% of the sample)	Place of residence n (% of the sample)	Education n (% of the sample)
65.97±18.36	PE-17.13±5.68 RD-17.52±4.68 PI-16.20±5.94 DI-15.11±5.89	14.75± 6.04	1 – 136(16.52) 2 – 171(20.77) 3 – 316(38.39) 4 – 159(19.31) 5 – 27(3.28) 6 – 14(1.70)	Single – 178(21.62) Cohabiting – 85(10.32) I Married – 523(63.54) II Married – 37(4.49)	0 – 341(41.43) 1 – 180(21.87) 2 – 253(30.74) 3 – 50(6.07)	Rural 308(37.43) Urban 515(62.57)	Secondary 418(50.78) Higher 405(49.22)

Age ranges: 1 – 25–31; 2 – 32–35; 3 – 36–40; 4–41–45; 5–46–50; 6– 51–60 years

Table 2. Evaluations of parameters of the LBQ^{INDEX} variable (N = 823)

Effect	LBQ ^{INDEX} Parameter	LBQ ^{INDEX} Std. Error	t	p	-95% CI	+95% CI	LBQ ^{INDEX} Beta	Beta Std. Error
Constant	55.586	2.178	25.51	0.000	51.311	59.862		
PSS	1.004	0.096	10.498	0.000	0.816	1.192	0.330	0.031
Age	-0.237	0.781	-0.305	0.712	-1.433	0.980	-0.014	0.038
No. of children	-2.386	0.785	-3.071	0.002	-3.950	-0.869	-0.128	0.042
Marital status: single	-5.835	1.371	-4.255	0.000	-8.526	-3.106	-0.151	0.036
Marital status: cohabitation	6.525	1.596	4.087	0.000	3.392	9.659	0.135	0.033
Marital status: married	-2.736	1.144	-2.391	0.0170	-4.982	-0.490	-0.085	0.035
Rural residence	-3.596	0.645	-5.572	0.000	-4.862	-2.329	-0.189	0.034
Secondary education	-1.392	0.5904	-2.357	0.0186	-2.551	-0.233	-0.076	0.033

PSS – perceived stress scale; LBQ^{INDEX} – total burnout score

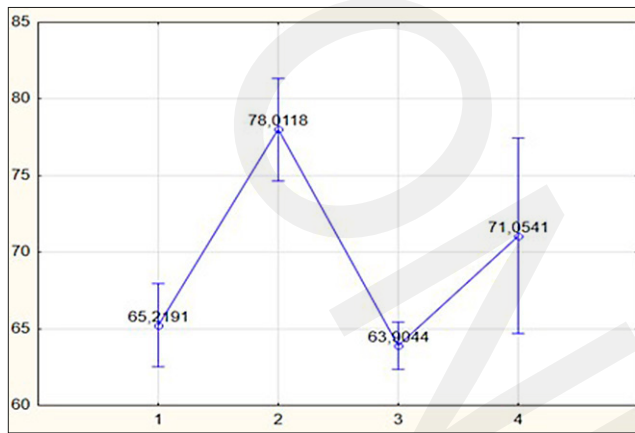


Figure 1. Average LBO^{INDEX} values obtained by men differing in marital status. marital status 1 – single; 2 – in open relationship; 3 – married for the first time; 4 – married for the second time

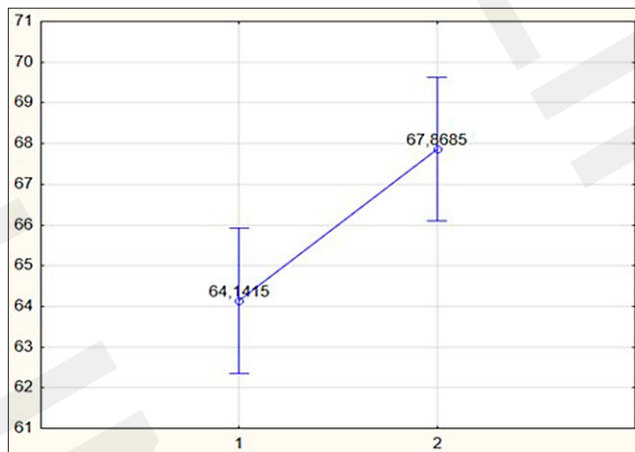


Figure 2. Average LBO^{INDEX} values obtained by men differing in education level. education 1- secondary; 2 – bachelor's or master's degrees

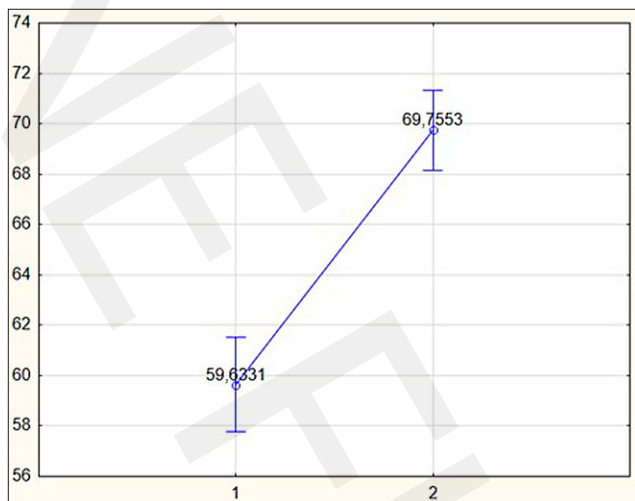


Figure 3. Average LBO^{INDEX} values obtained by men living in the country or in the city. residence 1 – rural; 2 – urban

Returning to the data presented in Table 2, it should be stated that the co-variable with the greatest impact on the level of burnout was living in a cohabiting relationship. This was followed by an increase in burnout of 6.57 units

compared to other forms of marital status. For men living in their first marriage and those with unmarried status, marital status reduced burnout levels by 5.80 and 2.69 units, respectively.

Another co-variable with high explanatory power was the respondents' place of residence. Living in a rural area reduced burnout levels by 3.59 units. Having children was also associated with a decrease in burnout levels; as the number of children increased by one child, the level of burnout decreased by 2.41 units. Secondary education was associated with a decrease in the level of burnout by 2.204 units compared to higher education. Among the main and additional variables, a one-unit increase in perceived stress was also associated with a one-unit increase in burnout, while a one-unit increase in age by another range of years contributed to a 0.23-unit decrease in burnout.

DISCUSSION

The study attempted to demonstrate the relationship of the level of occupational burnout with variables, which are usually not part of the main group of explanatory variables. These are factors whose distinct role as independent predictors of burnout or protective variables is often difficult to present. Being married co-occurred with lower levels of burnout compared to living in a non-marital cohabiting relationship, and living alone. Similarly, in a study of health care workers conducted during the COVID pandemic, being married co-occurred with lower levels of occupational burnout, but being married was a risk factor of personal burnout [27]. The effect of marriage on occupational burnout was non-significant after controlling for risk factors. These results were explained by the fact that married life entails factors such as: being a parent, less alcohol consumption, more time spent with family and friends during vacations, less overtime work, sufficient time for sleep [27]. It is known from research that the presence of family and the support of friends, in addition to the support provided by co-workers, plays a key role in alleviating burnout. According to the work-family enrichment theory [28], an employee's fulfillment of their professional role can enrich the quality of fulfillment of another role, such as marital or parental, and *vice versa*. For example, during the pandemic period, married life could lead to parental burnout resulting from the chronic stress associated with parenting; however, the presence of the other parent mitigated the impact of the pandemic on the level of burnout of their spouse [27].

The high level of burnout among men living in cohabitation needs explanation. Living in an informal relationship that does not end in marriage can reduce the partners' level of psychological well-being. This fact is explained by the greater instability of this type of relationship compared to marriage and the burden of caring for children from different relationships. However, another study conducted in Norway showed no difference between married and cohabiting couples in the favourable effect which having a partner has on mental health [29]. Living together in non-marital cohabitation may protect people's mental health in ways comparable to marriage. To sum-up, on average, cohabiting individuals may be better off than single individuals, but not as well off as married individuals, with respect to mental health.

As far as the education of the examined group is concerned,

a higher level of education co-occurred with greater burnout. It is known from research that a better-educated employee is sometimes more vulnerable to burnout due to higher personal expectations from the job [5, 30]. An example is the environment of medical academy staff, in which high levels of employee burnout are explained by expectations of functioning perfectly in competing roles, and carrying out related responsibilities [31]. In the case of 112 emergency operators, graduation from college is not a requirement for employment. In the current study, it was found that there are many people with higher education in this professional group. University graduates may regard their work with higher expectations than workers with a high school education, who have completed the 112 operator course or have its vocational equivalent. In this case, there is a risk of a discrepancy between the expectations of the employee and the benefits received for the effort put into their work.

A characteristic feature of the 112 emergency operators examined in the current study was a wide variety of professions and completed fields of study (43 trained professions). Most of them had education in the field of pedagogy, public administration, teaching, economics, national security and philology. It can be assumed that starting work at the Public Safety Answering Point (PSAP) resulted from disappointment or lack of work in the profession. In contrast to the described situation, continuing education in the learned profession, which complements the qualifications and skills already possessed, can reduce the level of stress and burnout. This was the situation in the example cited about the differences in severity of burnout in undergraduate and postgraduate nurses [16].

Living in rural areas was associated with lower levels of burnout among the men in the examined group. Research findings indicate that the risk of serious mental illness is generally higher in urban than in rural areas [32]. The differences are explained by greater environmental stress (lighting, noise, public space not adjusted to the number of people), which may result in neuronal changes [33]. There are few scientific publications on the role of the place of residence as a factor explaining burnout levels [34]. Besides, it is currently difficult to maintain a dichotomous division between urban and rural life. Residents of rural areas and small suburban towns work in the city, whereas former city dwellers move to suburban or rural areas. They work in the city and use the city network of services and, at the same time, may own a detached single-family home in the countryside. In the suburbs, residential housing developments are being built, forming closed social enclaves not infrequently supplemented by a network of service facilities. Therefore, the above-mentioned facts require more in-depth research.

The study confirmed that having and raising children is a factor that influences the level of burnout in working men. According to scientific publications, this effect is associated with an increasing number of social ties which are formed when a child is born. On the other hand, there are occupations in which having children can coincide with the occurrence of health problems among employees. The issue in question is a negative impact which identification with a child patient or victim can have on employee's mental health, which is likely to happen in medical professions or among emergency number operators [10].

The search for the causes of occupational burnout should not be narrowed only to stressors related to the demands of

the workplace. Demographic variables, which are important elements of an employee's non-work environment and often a source of personal strengths, should also be taken into account. In research on burnout, marriage and parenthood are usually considered to be additional sources of stress and causes of work-home and home-work conflicts [35]. Also, very few studies perceive the employee's place of residence as a category of personal resources. The current study shows that the aforementioned variables may be factors that coincide with lower levels of burnout. Their effect is associated with the beneficial influence of a network of social relationships supporting the employee and the life environment that promotes regeneration of psychological resources depleted by professional work.

The results of this study can lead to some practical conclusions regarding the prevention of occupational burnout. Employers can make such changes in the organization of the workplace that would allow their employees to make greater use of such resources as frequent and satisfying contact with a non-work social support network, removing sources of conflict that occur between the demands of work and the demands of home life, and taking measures to promote family life among employees. During career selection, it seems necessary to carefully match the requirements and capabilities of the job with the expectations and level of education of the candidate.

CONCLUSIONS

1. Being married co-occurred with lower levels of occupational burnout, compared to living in a non-marital cohabiting relationship and living alone.
2. A high level of occupational burnout was observed among men living in non-marital cohabitation.
3. A higher educational level co-occurred with greater occupational burnout.
4. A characteristic feature of the group of ECDs was the high diversity of educational fields.
5. Living in rural areas was associated with lower levels of occupational burnout.
6. Having children was associated with a decrease in burnout levels.

Limitations and strengths of the study. The main limitation of the study was the lack of random recruitment to the study group, which would make the results representative of a larger group of working men. The application of self-report questionnaires in research raises the risk of typical measurement errors (such as: reporting bias, method variance error, obtaining data from only one source and the error of reverse causality). The use of a cross-sectional model made it impossible to show directional relationships. Using a model with repeated measurement would have made it possible to check the stability over time of the results obtained.

An unquestionable strength of the study was its focus on and an analysis of co-variables, which are usually overlooked as main variables in other studies on occupational burnout. The proposed theoretical model made it possible to see resources in demographic factors. This is in contrast to those models in which they are perceived more as an additional source of stress for the employed person.

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