

JOB DEMANDS VERSUS RESOURCES: WORKPLACE FACTORS RELATED TO TEACHER'S BURNOUT

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Job burnout seems to be a serious problem nowadays, especially among teachers, who experience role conflicts, work load and emotionally burdening situations. The symptoms, like decreased work efficiency, low level of motivation, negative emotions, physical problems and the tendency to avoid social relationships are influencing high number of employees worldwide. Certain professionals, for example, medical staff and teachers are more affected by burnout. These occupations seem to strain employees both mentally and emotionally. Empirical evidence claims that certain job demands are likely to provoke burnout, while resources at workplace can help employees to avoid the harmful effects of mental and emotional load. Our online survey investigated burnout among public education teachers (N=327), and examined its relationship with specific workplace factors. The goal of our study was to set up a model which can explain the occurrence of burnout with organizational and workplace aspects. We found significant positive correlation between job demands - like emotional strain and peer conflicts - and burnout factors. On the other hand, job resources - like the support of a superior and the possibility of personal improvement - were related negatively to burnout score. We also found that both emotional and professional social support of co-workers seem to correlate negatively with burnout. These results suggest that certain workplace factors are important in the development of burnout, while others seem to be useful to reduce the effects of job demands. The results also indicate that the social environment at the workplace could have significant impacts on burnout. Support of peers and superiors can be used as resource to solve everyday tasks, to maintain motivation and to aid professional development. In our paper we discussed our results focusing on burnout prevention in schools.

Keywords: job demands, job resources, teacher burnout

Nowadays job burnout syndrome affects thousands of people worldwide, but the research of the topic became widespread after the description of Freudenberger (1974). Burnout affects workers from a wide range of occupations. Its presence among teachers is especially important, because the harmful effects of burnout (decreasing professional performance, lack of motivation, negative emotions) can not be considered only as personal problems: they have influence on student motivation and performance as well (Pintrich, 2003).

Burnout as a psychological problem and research topic

Burnout is a harmful state, which evolves under the long time presence of workplace demands and stress. People affected by burnout experience typical physical and psychological symptoms. Physical symptoms include sleep problems, headache and chronic fatigue (Freudenberger, 1974). Psychological signs of burnout can occur as dominance of negative emotions like anger and frustration, which frequently causes cynical responses (Maslach & Goldberg, 1998). Consequently, employees' motivation and work efficiency begins to decrease, which frequently leads to dropout (Bakker, Demerouti, de Boer & Scaufeli, 2003). Maslach (1982) identified three main aspects which can indicate a person's burnout: emotional exhaustion, depersonalization and reduced personal accomplishment. The first refers to the depletion of the emotional resources, the second involves both negative attitude towards other people and lack of idealism. The third aspect is experienced by people who feel themselves incompetent and demotivated. The widely used Maslach Burnout Inventory's (MBI; Maslach & Jackson, 1981) questions are related to these three factors mentioned above.

Burnout is evolving continuously, as the level of motivation decreases due to the harmful effects of work stress and overload (Price & Murphy, 1984). Mainly those sources of stress can cause burnout which are perceived as unchangeable and invincible (Cherniss, 1980). Factors which evoke burnout can be classified in three types: interpersonal, intrapersonal and situational (Hare, Pritt & Matthews, 1988). Interpersonal factor can be the perceived level of social support, both at workplace and in the private life. Intrapersonal aspects are traits like typical coping mechanisms, which can influence the effect of stress. Situational factors are such demographic variables as gender, age, professional experience or family state.

Workplace characteristics related to the development of burnout

Various theories explain why burnout is more frequent in some occupations. Karasek's (1979) demand-control model assumes that people experience job stress due to the high demands (time pressure and work overload) and the low level of control over the tasks. Other theories include more factors that can counterweight the effect of job demands (Maslach & Goldberg, 1998), which implicates that work conditions affect the development of burnout via the presence of demands and resources. Demands mean all aspects of work which requires physical, mental or psychological effort from employees, for example the emotional costs of personal conflicts (Demerout, Bakker, Nachreiner & Schaufeli, 2001). On the other hand, resources include all the tools that can be used to complete tasks, reduce the physical and psychological costs of work, or to promote personal growth and

development. Resources, like the support of superiors, the possibility to plan, schedule and perform tasks personally or have a secure workplace can reduce the harmful effects of job demands (Demerout et al., 2001). Organizational climate can also influence the development of burnout, as it affects the employees' psychological state (Schein, 1997). Depending on the its characteristics, organization climate can act the part of both job demand and resource. In an ideal case, the climate makes individual growth possible and influences interpersonal or intergroup relationships positively (Ceyda & Servinc, 2012). Moreover, organizational climate can prevent the development of burnout if it makes demands more easy to overcome (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007), for example if it enables workers to use a wider range of coping mechanisms (McCulloch & O'Brien, 1986). The predominance of demanding factors reduces the employee's commitment toward the workplace, and forces them to make extra effort, which leads to increased chance of being strained both physically and emotionally (Demerouti et al., 2001). An increased level of absence and dropout can be observed among people experiencing the symptoms of burnout (Bakker et al., 2003), which behavior can be perceived as a coping mechanism of reducing stress (Johns, 1997). Contrarily, employees who have more resources at workplace tend to report lower levels of burnout (Hakanen, Bakker & Schaufeli, 2006), and higher commitment to the workplace (Demerouti et al., 2001).

Social support is also capable of reducing the symptoms of burnout, experienced both at workplace and in the private life. Supportive behavior of colleagues and superiors can help resolving tasks and lowering emotional stress (Glass & McKnight, 1996), which mediately results in decreased level of burnout (Brouwers, Tomic & Boluijt, 2011). Those teachers, who have positive representations of their co-workers and pupils, report lower scores on burnout scales (De Caroli & Sagone, 2012).

As the development of burnout is strongly connected to job and workplace characteristics, the high prevalence in some occupations can be explained. Mainly those jobs are concerned, where the job demand/resource ratio is high, and professionals have to deal with emotionally burdening situations. These circumstances are common in professions where employers have to deal with other people, such as medical staff or psychologists (Price & Murhpy, 1984). Empirical evidence claims that burnout also occurs frequently among other human service workers, such as teachers, because they experience that their work is emotionally demanding and exhausting (Hakanen, Bakker & Schaufeli, 2006; Lackritz, 2004). Teachers have to deal with personal conflicts daily and they are supposed to complete administrative tasks, but their resources are limited (Fernet, Guay, Senécal & Austin, 2012). Therefore, teachers report decreased personal accomplishment, and they are less motivated to make efforts for their professional development (Özer & Beycioglu, 2010).

Goals

The goal of our research was to test a model which can describe the relations between burnout scores and workplace characteristics, social environment and situational factors. Our approach aims to explain burnout with interpersonal and situational factors.

Hypothesis 1. Burnout and job demands are positively related, while job resources are negatively connected to burnout.

Correspondingly to the Job Demands-Resources model (Demerouti et al., 2001), burnout scores are assumed to correlate positively with workplace factors, which are mentally, psychologically or physically demanding. On the other hand, we suppose that job resources have a negative relationship with the reported level of burnout.

Hypothesis 2. The ratio of job demands and resources is supposed to relate more strongly to burnout scores than job demand score by itself.

On the basis of the Job Demands-Resources model (Demerouti et al., 2001) job resources are supposed to be able to counterweight the negative effects of job demands and, therefore, the difference of demands and resources are assumed to connect more strongly to burnout scores, than job demands by themselves.

Hypothesis 3. Burnout and social support is negatively related.

Social support seems to be able to protect employees from burnout both at workplace and in the private life (Brouwers, Tomic & Boluijt, 2011; De Caroli & Sagone, 2012).

Hypothesis 4. Burnout is related to age and gender: older teachers and females report higher scores on burnout scales.

Age is assumed to connect positively to burnout scores as older teachers suffer sustained stress and work load, which can deplete their psychological resources (Koruklu et al., 2012). Although both males and females are affected by stress and work load, female teachers are expected to report higher burnout scores because they frequently have to be supportive at private life also, while their own problems get less attention by peers (Purvanova & Muros, 2010, Grayson & Alvarez, 2008).

Methods

Data collection and participants

Online surveys were used to collect data. Primary and secondary educational institutions were asked to participate in the project via a requesting e-mail. The message contained appropriate information about the goals of the study, the methods used and data management. The institutions were selected from the homepage of the Hungarian Educational Office, based on regional and type aspects. Teachers of the institutions then decided individually to participate. Every participant was given a pre-written feedback on their burnout scores at the end of survey, and were offered the opportunity to contact the leaders of the research team for further questions. Participants did not receive compensation for the participation. Altogether 327 teachers provided valid data in the research (252 females and 75 males; $M = 46.82$ year, $s.d. = 9.02$ year).

Although there is a remarkable predominance of female participants (77% of the sample), equalizing of gender ratio was not an aim. According to the data collected by the Hungarian Central Statistical Office the actual proportion of female teachers in the Hungarian population is 79%, so the collected data is representative with respect to gender ratio (Központi Statisztikai Hivatal, 2013).

Measures

1. *Burnout* was measured by the BO-SE questionnaire (Hennig & Keller, 1995), which is the modified version of the MBI (Maslach & Jackson, 1981), specially adapted for teachers. The Hungarian adaptation of the questionnaire was created by the Institute of Pedagogy of Győr-Moson-Sopron county. The BO-SE questionnaire is capable of measuring four factors of burnout: Mental, Emotional, Social and Physical. The questionnaire contains 6 items on each subscale, and each item is answered by a 5-point Likert-scale ranging from 0 to 4 from strongly disagree to strongly agree (see *Appendix 1* for sample items). Every subscale can range from 0-24, and the cumulative score of the four subscales defines the indicator of Burnout/stress sensitivity, which can range from 0-96.

Confirmatory factor analysis (CFA) was used to test model fit. The analysis showed moderate fit indices compared to the standards of Schreiber, Stage, King, Nora, Barlow (2006): Chi square/degree of freedom = 2.611, Comparative fit index (CFI) = 0.868, Tucker-Lewis Index (TLI) = 0.85, Root mean square error of approximation (RMSEA) = 0.07. Reliability analysis proved subscales to have reliable Cronbach's alpha scores (ranging from 0.62 to 0.82).

2. *Job demands and resources* were measured by newly constructed scales, because similar questionnaires suitable for our purposes are not available in Hungary. We used the Questionnaire on the Experience and Evaluation of Work (QEEW; Van Veldhoven, et al 2002) as the basis of our approach, but we created new items suitable for our research. We used four subscales for job demands: Work style, Mental demands, Emotional demands and Interpersonal conflicts. Each subscales contained three items (see *Appendix 2*. for sample items). Job resources scale includes four subscales: Personal growth (4 items), Information and feedback (3), Control (4) and Support of superior (3; See *Appendix 2*. for sample items). Items of every subscales were answered by a 5-point Likert scale (from strongly disagree to strongly agree). Percentage scores were calculated on each scale, to enable comparisons of subscales with different number of items. Beside subscales and total score, the ratio of job demands and job resources was also calculated, by subtracting the total score of job resources from the total score of job demands. We refer to this variable as „ratio of demand”.

Confirmatory factor analysis (CFA) was used to test model fit. The analysis showed moderate fit indices compared to the standards (Schreiber et al., 2006): Chi square/degree of freedom = 2.502, CFI = 0.888, TLI = 0.866, RMSEA = 0.068. Reliability analysis proved subscales to have good reliability Cronbach's alpha scores (ranging from 0.65 to 0.95).

3. *Workplace social support* was measured by newly constructed scales, because similar questionnaires suitable for our purposes are not available in Hungary. We used the Questionnaire on the Experience and Evaluation of Work (QEEW; Van Veldhoven et al., 2002) as the basic of our approach, but we created new items suitable for our research. Two subscales of social support were used: emotional support (4 items) and professional support (3 items; see *Appendix 3*. for sample items). Items of both subscales were

answered by a 5-point Likert scale (from strongly disagree to strongly agree).

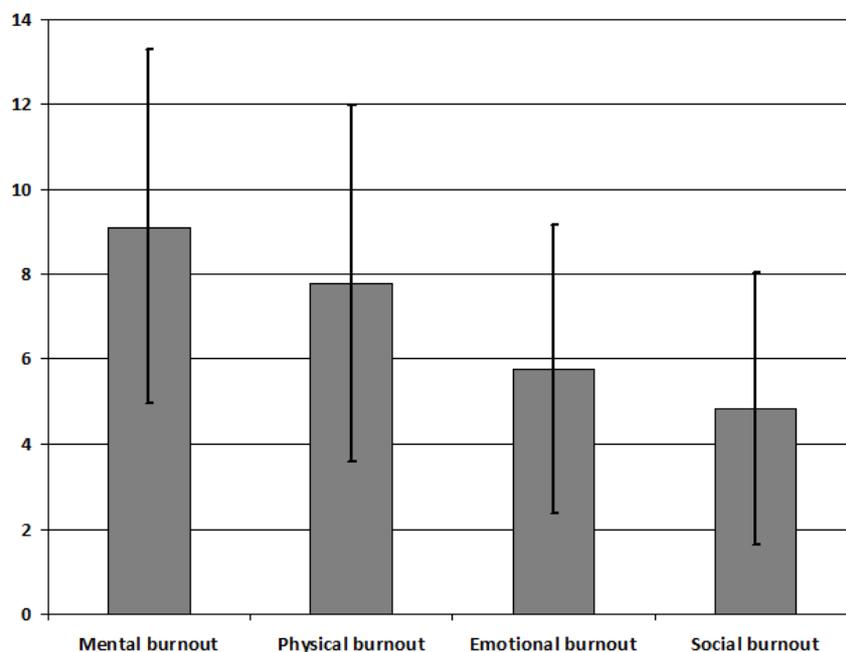
Confirmatory factor analysis (CFA) was used to test model fit. The analysis showed moderate fit indices compared to the standards (Schreiber et al., 2006): Chi square/degree of freedom = 5.617, CFI = 0.946, TLI = 0.913, RMSEA = 0.04. Reliability analysis proved subscales to have good reliability Cronbach's alpha scores (0.79 and 0.85).

Results

Results of the burnout scales

SPSS for Windows 15.0 and Amos 18.0 was used for statistical analysis. The BO-SE questionnaire (Hennig & Keller, 1995) measures burnout on four subscales and one cumulative scale. Results showed that teachers scored relatively low on the burnout questionnaire, because the mean score of Burnout/stress sensitivity was 27.48 point (s.d. = 12.62 point) out of 96 point. Regarding the subscales, mental aspect of burnout proved to have the highest score ($M = 9.11$), followed by physical ($M = 7.78$), emotional ($M = 5.75$) and social ($M = 4.82$) burnout (see *Figure 1.*). Repeated measures Analysis of Variance's (ANOVA) main effect revealed significant differences between the mean scores of the subscales ($F(2.6, 860.9) = 123.311$; $p < 0.001$). LSD post hoc analysis showed significant differences between all subscales (all $p < 0.001$).

Figure 1.: Means and standard deviations of the four burnout subscales. According to the LSD post hoc analysis there are significant differences between the means of all scales (all $p < 0.001$).



Gender differences were expected in H_4 . According to the Multivariate Analysis of Variance (MANOVA) there are significant gender differences on two burnout scales: mental ($F(1,325) = 5.568$; $p < 0.001$) and physical ($F(1,325) = 7.543$; $p < 0.001$). On both scales, females scored higher than males. Although, there are no significant gender differences on emotional and social burnout, nor regarding the total burnout score.

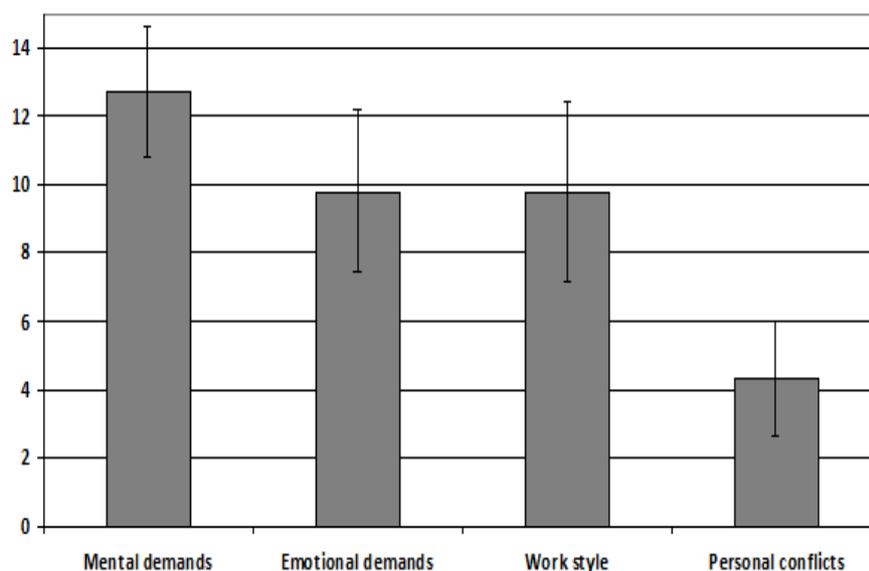
In H_4 a positive link between age and the level of burnout was expected. Pearson correlation analysis revealed no significant relationships between age and burnout subscales ($p > 0.05$).

Relations of burnout with job demands and job resources

One of the main goals of the study was to explore the link between burnout and job demands/resources among teachers. H_1 expected job demands and burnout to connect positively, while assumed a negative link between job resources and level of burnout. Nevertheless, H_2 expected the ratio of job demands and resources to have stronger relationship with burnout than work load variables have alone.

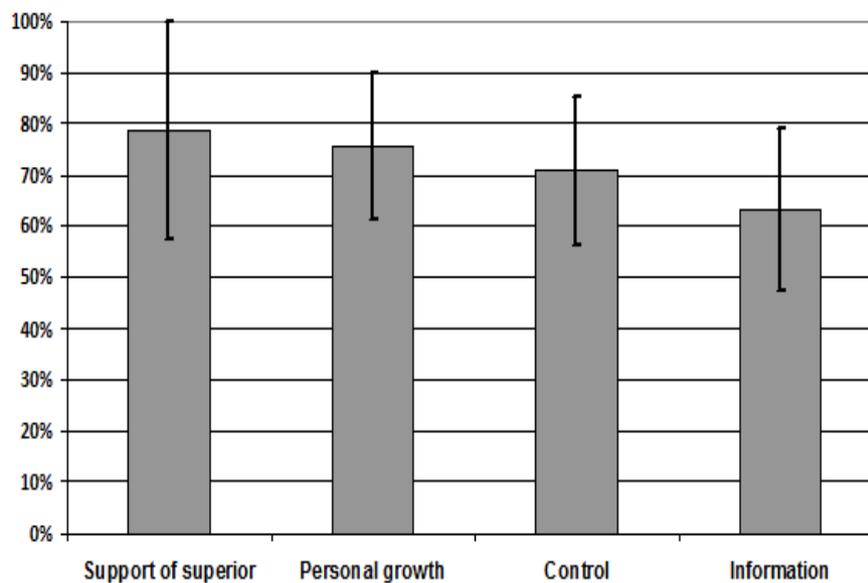
Results showed mental demands to have the highest mean ($M = 12.74$), followed by emotional load ($M = 9.81$), work style ($M = 9.8$) and personal conflicts ($M = 4.31$, see *Figure 2*. for details).

Figure 2. Means and standard deviations of job demands.



In case of resources, teachers scored the highest mean percentage of total score on support of superior subscale ($M = 78.65\%$), followed by the possibility of personal growth ($M = 75.61\%$), control ($M = 70.79\%$) and information/feedback ($M = 63.28\%$, see *Figure 3*. for details).

Figure 3. Means and standard deviations of job resources.



Links between job demands/resources subscales and burnout scores were measured by Pearson correlation analysis. The results showed significant weak and moderate positive correlations between job demand scores and burnout (all $r(327) < 0.121$; all $p > 0,05$), while between job resources and burnout significant weak and medium negative relationships were found (all $r(327) < -0.121$; all $p > 0,05$). The ratio of demand seems to be more strongly connected to burnout scores, because moderate and strong correlations were found between the variables (all $r(327) > 0,412$; all $p < 0,05$). See *Table 1* for detailed results.

Table 1. Results of Pearson correlation analysis between burnout subscales and the scores of the job demands/resources. As presumed, job demands and ratio of demands connect positively to burnout scores, while there is a negative link between burnout subscales and job resources. All $N = 327$ and all $p < 0,05$.

	Job demands total score	Job resources total score	Ratio of demands
Mental burnout	0.476	-0.477	0.614
Emotional burnout	0.341	-0.427	0.499
Social burnout	0.471	-0.340	0.517
Physical burnout	0.256	-0.376	0.412
Total score of burnout/stress sensitivity	0.470	-0.480	0.612

Social support and burnout

H_3 expected both emotional and professional social support to be connected negatively to burnout scores. Pearson correlation analysis revealed medium negative links between all forms of social support and burnout subscales (all $r(327) < -0.151$; all $p < 0,05$). See *Table 2* for detailed results.

Table 2. Results of Pearson correlation analysis between the different types of social support and burnout subscales. Social support is connected negatively to burnout. All N = 327 and all $p > 0,05$.

	Total score of social support	Emotional social support	Professional social support
Mental burnout	-0.327	-0.274	-0.321
Emotional burnout	-0.273	-0.195	-0.296
Social burnout	-0.171	-0.151	-0.163
Physical burnout	-0.343	-0.323	-0.309
Total score of burnout/stress sensitivity	-0.325	-0.275	-0.318

Interpersonal and situational model of burnout

Main purpose of the study was to build a model which can explain the development of burnout with workplace characteristics. Our model was built mainly on the Job Demands-Resources model (Demerouti et al., 2001), and theories of social support (Brouwers, Tomic & Boluijt, 2011). Linear regression analysis with stepwise method was used to build models, where the dependent variable was burnout/stress sensitivity.

Firstly, total scores of the scales were used to build the model. From four scales (demands, resources, ratio of demands, social support) two were excluded in Model 1. Ratio of demand and social support together explained a significant proportion of variance in burnout/ stress sensitivity score ($R^2 = 0.388$, $F(2; 324) = 102.689$, $p < 0.001$). Both variables significantly predicted burnout score (social support: $\beta = -0.123$, $t(323) = -2.638$, $p = 0.009$; ratio of demands: $\beta = 0.569$, $t(323) = 12.229$, $p < 0.001$).

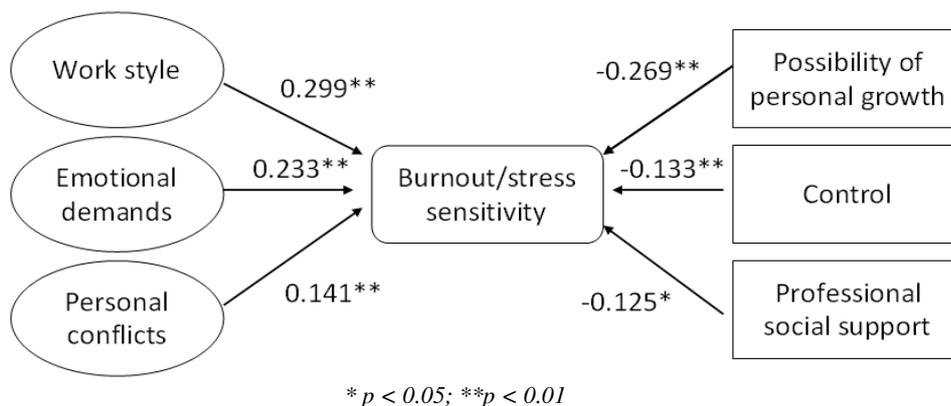
Table 3. Results of linear regression analysis

Variable	Model 1			Model 2		
	B	SE B	β	B	SE B	β
Ratio of demand	.436	.036	.569**	-	-	-
Total score of social support	-.33	.125	-.123**	-	-	-
Work style demands	-	-	-	1.422	.221	.299**
Resource: personal growth	-	-	-	-1.148	.204	-.261**
Emotional demands	-	-	-	1.25	.253	.233**
Demands: interpersonal conflicts	-	-	-	1.068	.350	.141**
Resource: control	-	-	-	-.573	.200	-.133**
Professional social support	-	-	-	-.552	.214	-.125*
R^2	.388			.432		
F for change in R^2	102.689**			40.610**		

* $p < 0.05$, ** $p < 0.01$

Model 2 contained six variables out of eleven subscales. Work style, emotional demands, professional social support, personal growth and control together explained a significant proportion of variance in burnout/stress sensitivity score ($R^2 = 0.432$, $F(6; 320) = 40,610$, $p < 0.01$). All variables predicted burnout score significantly (see *Figure 4*. for details). In Model 2, five variables were excluded: professional experience, mental demands, information, support of superior and emotional social support.

Figure 4. Standardized coefficients of Model 2. Correspond with our hypothesis, job demands are connected positively to burnout score, while job resources and social support relates negatively to stress sensitivity.



Discussion

The present research had several goals.. First of all, it aimed to explore the level of teacher burnout in Hungary. It was necessary because previous findings revealed burnout to be widespread among Hungarian teachers (Petróczi, Fazekas, Tombác & Zimányi, 1991; Petróczi, 2007). Our model expected relationship between burnout and workplace factors, such as job demands and resources (Demerouti et al., 2001), and social support of peers (Brouwers, Tomic & Boluijt, 2011).

Although standardized scores of burnout among Hungarian teachers are not available, our results show lower values for burnout subscales than it could be presumed on the basis of earlier studies (Petróczi, 2007). There are possible explanations for lower burnout scores. First of all, participation in the study was voluntary. Therefore teachers with high burnout and low motivation could have avoided participation, while their more enthusiastic peers could be over represented in our research sample. On the other hand, social desirability also could have influenced responses, as it frequently happens with self-reported questionnaires (Ashton, Buhr & Crocker, 1984). This effect can be stronger among teachers, as the expectations of the society also urge them to pursue perfections. These expectations could be interiorized by some teachers, which leads them to consider burnout inconsistent with the representation of professional perfectionism. Therefore they tend to avoid responses regarding to their imperfection and incompetence.

Out of the four aspects of burnout, mental and physic symptoms are the most dominant. Moreover, females scored higher than males on burnout scales. Previous studies did not find obvious results on gender differences (Purvanova & Muros, 2010). The present paper suggests that females are not more affected regarding the aspects of burnout, because significant differences in total burnout score were not found.

The main goal of the study was to test a theoretical model, which used workplace factors and social support to explain burnout score. Four separated factors of both job demands and resources were distinguished. Moreover, their ratio was also applied, which is the novelty of our model. Based on the statistical parameters the developed questionnaires are suitable for further measurements. Therefore these methods could be useful for subsequent diagnostic purposes, and to form developmental plans for organizations based on the results. Measuring complete institutions could be

beneficial because less motivated teachers would also tend to participate. Moreover, examining the variance of the perceived level of demands and resources in the same school could also provide us useful details on the topic of improving their ratio. This research setting could also be used to identify those psychological traits, which cause difference in burnout and stress susceptibility.

Out of job demands, mental work load proved to have the highest score, followed by emotional demand, work style and personal conflicts. Among job resources, results showed that support of superior is the strongest aspect, followed by possibility of personal growth, control and information/feedback. According to the ratio of job demands and resources, participants perceive more available resources than burdening work aspects. This ratio is in correspondence with results of total burnout score: preponderance of resources comes with low burnout scores.

Findings related to social support proved the corresponding hypothesis, in accordance with previous researches (Brouwers, Tomic & Boluijt, 2011; De Caroli & Sagone, 2012): social support links negatively to burnout, particularly to mental and physical aspects. Moreover, details show that both professional and emotional aspects to have important connections with burnout. Emotional social support is more strongly related to physical burnout, while professional help of peers is linked to mental burnout. Based on the correlations and on the results regression analysis, facilitation of knowledge sharing and empathy could be a useful tool in coping with burnout in a group.

Many previous studies have proved workplace factors to influence the development of burnout (e. g. Maslach & Goldberg, 1998; Demerouti et al., 2001). The present research was based particularly on the Job Demands-Resources model of Demerouti and his colleagues. We aimed to create a research method which is capable of measuring both job demands and resources on an institutional level, and can be used to evaluate their relations with the level of burnout. Statistical analysis of the questionnaires (CFA and Cronbach's α) suggests that the presented scales are capable of differentiating between four-four aspects of both demands and resources. On the basis of the correlation analysis, the subscales are related to burnout in accordance with previous assumptions. However, the ratio of perceived level of demands and burnout seems to be more strongly connected to burnout than the subscales individually.

Model 1 by regression analysis indicates that ratio of demands and resources improves the development of burnout. Moreover, according to Model 2, mainly personal conflicts, work style and emotional demands have significant effect on burnout score. On the other hand, resources of control and possibility of personal growth significantly lowers the probability of burnout.

Our current study has several limitations. First of all, our sample is not representative for Hungarian conditions, although ratios for gender and type of school both reflect moderately well the present consistence of education. Moreover, online data collection makes analysis of the sample difficult, and presumes that teachers who suffer from burnout are more probable to refrain from participation. Finally, despite the fact that statistical analysis suggests our measures are reliable, further studies on validation issues should be carried out, which would enable to evolve new subscales for job demands and resources.

Even though the present research has limitations, the results verified previous knowledge on teacher burnout, and revealed new details of the issue. If further research confirms the first results, our model could be capable of measuring burnout and related workplace factors as a diagnostic tool. Accordingly the collected data could be used both for organizational development and burnout prevention with the assistance of school counselors.

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Appendix

Appendix 1.: Sample items of BO-SE Questionnaire

Mental subscale: "I am doubtful about my professional capabilities."

Emotional subscale : "I regularly feel troubled and anxious."

Social subscale : "I avoid discussions with other teachers and/or with the pupils."

Physical subscale : "I have persistent physical discontents, like headache or digesting problems."

Appendix 2.: Sample items for Job demands and Job resources subscales:

Job demands

Work style: "I have to work at a hurried pace."

Mental demands: „My work needs continous attention.”

Emotional demands: „I meet situations which make me upset emotionally.”

Interpersonal conflicts: „I have conflicts with my co-workers.”

Job resources

Personal growth: „My work gives me the possibility to grown personally”

Information and feedback: „I get enough feedback during my work”

Control: „I can participate in planning my tasks.”

Support of superior: „I can call for my superiors help, if I need it.”

Appendix 3.: Sample items for Social support subscales:

Emotional support: "I like talking with my colleagues after a long day."

Professional support: "I can count on my colleagues, when I face difficulties during my work."