

# Emotion Work and Burnout: Cross-sectional Study of Nurses and Physicians in Hungary

**Aim** To investigate predictors of occupational burnout, such as emotion work, among health care workers and compare the frequencies of burnout and emotion work in nurses and physicians.

**Method** A cross-sectional survey was conducted in 2007 and 2008 among 80 physicians and 76 nurses working in a variety of health care settings in Hungary. The survey contained sociodemographic questions and work- and health-related questions from, respectively, the Maslach Burnout Inventory-Human Services Survey and the Hungarian version of the Frankfurt Emotion Work Scale. To identify the dimensions of emotion work associated with burnout, linear regression analyses were carried out. To analyze differences in burnout and emotion work between nurses and physicians, independent *t* tests were used.

**Results** Nurses reported significantly higher emotional dissonance and fewer regulation possibilities, such as interaction and emotion control, than physicians. However, no differences were found in the level or frequency of burnout. Nurses had fewer regulation requirements regarding sensitivity and sympathy. Linear regression analyses showed that emotional dissonance for emotional exhaustion ( $\beta=0.401$ ) and display of negative emotions for depersonalization ( $\beta=0.332$ ) were the strongest predictors of burnout.

**Conclusion** The factors that should be taken into account when developing prevention and intervention programs differ for nurses and physicians. In nurses, the focus should be on stressors and emotional dissonance, while in physicians it should be on work requirements and display and regulation of negative emotions.

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During the last decade, the topic of emotion work has gained a much greater significance in organizational and health psychology. As defined by Zapf et al, emotion work occurs when employees are required by the employer to regulate their emotions in order to display appropriate emotions to the client (1). Emotion work determines the quality of social interaction between the caregiver and client. Action theory distinguishes 3 aspects of emotion work requirements: regulation requirements, regulation possibilities, and regulation problems. Regulation requirements (display of emotions) are related to properties of the hierarchical-sequential organization of action and constitute the complexity of decision. Regulation possibilities refer to the concept of control. Regulation problems, also known as emotional dissonance, are the discord between felt and expressed emotions and occur when stressors disturb the regulation of action (1,2). Current burnout research is greatly facilitated by theories explaining work stress (3-6). Using Karasek's job demands control model, the research group of LeBlanc and DeJonge investigated emotional job demands (3-5). It was also found that health care workers are at high risk for emotional exhaustion resulting from interaction with clients (6,7).

Burnout is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment occurring in people-oriented and service work (8). Emotional exhaustion refers to feelings of being depleted of one's emotional resources. Depersonalization is a negative and cynical attitude and behavior toward clients. Reduced personal accomplishment is the self-perception of a decline in one's own competence and self-efficacy. Burnout has most often been studied in caregiving professionals, such as clinicians, psychologists, social workers, and nurses (9-17). Indeed, several studies have directly measured the emotional aspects of job demands dealing either with emotion work (18-20) or burnout (21-24). However, few studies investigating the relationship between burnout and emotion work have been conducted in the nursing and health care profession, particularly in Hungary and Eastern Europe (25). The differences in burnout and emotion work between nurses and physicians have been studied in the Netherlands, Germany, and Spain (3-5,14,26). Some studies have suggested that physicians experience more burnout than nurses (14,16), while others have suggested the opposite (17).

Recently, burnout has been conceptualized as a psychological syndrome that takes place in response to chronic interpersonal stressors on the job (6). According to Zapf, burnout makes individuals no longer able to adequately

manage their emotions while interacting with clients (27). According to the model of emotion work by Grandey (28), antecedents of emotion regulation are the situational variables, eg, interaction between the caregiver and client.

A relationship between burnout and emotion work has recently been found in the health care setting in Western European countries (3,4,29-31). Health care professionals, especially nurses, are at high risk of burnout because their job requires a high level of emotion work (18-20,32,33). Most studies have found a positive relationship between emotion work and burnout, suggesting that emotional dissonance may predict emotional exhaustion and depersonalization (25,34). Demerouti (35) argues that contribution of job demands and resources to explaining burnout may vary across occupations because these features differ across occupations. Burnout literature usually focuses on general variables that predict burnout and does not distinguish between predictors across health professions (6,8). Thus, we hypothesized that differences in emotion work can be detected between nurses and physicians, although the predictors of the syndrome do not vary.

This study assesses the relationships between burnout and emotion work in a sample of Hungarian health care professionals and investigates how emotional job demands relate to the frequency of burnout.

## METHOD

### Procedure and participants

A cross-sectional survey was conducted in 2007 and 2008 among health care professionals working in a variety of health care settings in Hungary. Health care workers working in in- and outpatient services and general practice were approached through authors' personal contacts or through professional training courses. Ethical approval for the study was obtained from the Regional and Institutional Committee of Science and Research Ethics.

Our research hypotheses were as follows:

H1: Differences in level of burnout can be detected between nurses and physicians. Nurses experience higher burnout levels than physicians.

H2: Differences in emotion work, such as regulation possibilities, can be seen between nurses and physicians. Nurses show lower control than physicians.

H3: Emotion regulation-related requirements (display of positive, negative emotions, sensitivity, and sympathy requirements) and regulation problems (emotional dissonance) associate with burnout.

H4: Sex, education, age, and years of work experience do not predict burnout, while working hours and workload predict it.

H5: There are no differences in predictors of burnout between the two occupational groups.

### Measuring instruments

Self-administered questionnaires were used to collect data. Burnout was measured using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), which is a 22-item scale designed to measure 3 dimensions of burnout: emotional exhaustion (eg, "I feel used up at the end of the day"), depersonalization (eg, "I have become more callous toward people since I took this job"), and lack of personal accomplishment (eg, low scores on the items as "I feel I'm positively influencing other people's lives through my work"). The items are rated using a scale from 0 (never) to 6 (everyday). A high level of burnout is indicated by high scores on the emotional exhaustion and depersonalization subscales and low scores on the personal accomplishment scale (36). Internal consistency was measured using Cronbach  $\alpha$  reliability coefficients.

Emotion work was measured by the Hungarian version of the Frankfurt Emotion Work Scales (FEWS) (37). The original FEWS, developed in Germany by Zapf et al, includes 61 self-reported items measuring the frequency of expression of organizationally desired emotions (38). Responses to the items are given on a five-point Likert type scale ranging from 1 (very rarely/never) to 5 (very often/several times an hour). The instrument comprises 11 factors of derived subscales tapping into different areas of emotion work: display of emotions (positive or negative, eg, "How often in your job do you have to display pleasant emotions towards clients?"), demands for sensitivity ("How often is it necessary in your job to empathize with the client's emotions?"), emotional sympathy ("How often do you have to express sympathy towards clients?"), emotion control ("How often can you decide yourself on as to which emotions to display towards clients?"), interaction control ("How often can you yourself decide upon the amount of time you devote to a client, independent of the clients' needs?"), and emotional dissonance ("How often in your job

do you have to suppress emotions in order to appear 'neutral' on the outside?"). According to Zapf, the scale of emotional dissonance consists of items referring to the display of emotions that are not felt and the suppression of felt emotions (6). The last two scales consist of single items: norms regarding emotions ("These rules were explained to me by my boss") and the extent of client contact ("How many hours on average do you work per day?").

During validation of the Hungarian version of the FEWS with 327 drivers of public buses (37), the factor structure was modified because of difficulties with the scales for demands for sensitivity and emotional sympathy. The items for these two scales were merged into one component, subsequently named the Sensitivity-Sympathy scale. The reliability indicators were higher than the indicators based on the original German factors, indicating the validity of this approach (25).

### Statistical analysis

Mean and standard deviation (SD) of each of the MBI subscale scores were calculated for the whole sample, as well as for nurses and physicians separately. To assess differences in the mean scores on each burnout dimension and on each emotion work dimension between nurses and physicians, independent samples *t* tests were performed. Descriptive statistics (means and SD) and reliability values for each subscale regarding burnout and emotion work were calculated. To identify the dimensions of emotion work that are associated with burnout, linear regression analyses were carried out on the total sample and separately on nurses and physicians. The relationships between the burnout subscales (dependent variables) and the aspects of emotion work (independent variables) were evaluated by determining regression coefficients (standardized coefficients,  $\beta$ ) and *t* test statistics. A *P* value of <0.05 was considered significant for all tests. SPSS software, version 15.0 (SPSS Inc., Chicago, IL, USA) was used for all analyses.

### RESULTS

In total, 199 questionnaires were returned (response rate 30.4%) from 80 physicians (general practitioners, specialists), 76 nurses (assistant nurses, lower qualified nurses), and 43 other allied health workers. Socio-demographic variables, job-related variables, and health-related information were studied (Table 1). The mean age was  $42.3 \pm 12.5$  years for the total sample,  $38.3 \pm 9.3$  years for nurses, and  $43.8 \pm 12.5$  years for physicians ( $P=0.002$ ). The average

work experience was  $15.9 \pm 12.1$  years for the total sample,  $15.6 \pm 10.2$  years for nurses, and  $16.0 \pm 12.2$  years for physicians ( $P=0.824$ ). The average number of working hours per week was  $41.8 \pm 17.9$  for the total sample,  $42.0 \pm 7.6$  for nurses, and  $45.4 \pm 25.3$  for physicians ( $P=0.270$ ).

In addition to socio-demographic questions, burnout and emotion work were measured on several scales. Descriptive statistics and reliability values for each subscale regarding burnout and emotion work are shown in Table 2.

**TABLE 1.** Demographic characteristics of the sample of health care workers in Hungary

|                                | No. (%) of participants in the total sample (n=199)* | No. (%) of nurses (n=76) | No. (%) of physicians (n=80) |
|--------------------------------|--|--------------------------|------------------------------|
| <b>Sex:</b>                    |  |                          |                              |
| male                           | 33 (16.6)  | 4(5.3)                   | 25(31.3)                     |
| female                         | 166 (83.4)   | 72(94.7)                 | 55(68.8)                     |
| <b>Marital status:</b>         |  |                          |                              |
| single                         | 45 (22.6)  | 16(21.1)                 | 23(28.8)                     |
| married                        | 88 (44.2)  | 31(40.8)                 | 34(42.5)                     |
| cohabiting                     | 28 (14.1)  | 13(17.1)                 | 11(13.8)                     |
| divorced                       | 30 (15.1)  | 12(15.8)                 | 10(12.5)                     |
| widowed                        | 8 (4.0)  | 4(5.3)                   | 2(2.5)                       |
| <b>Children:</b>               |  |                          |                              |
| no                             | 79 (39.7)  | 30(39.5)                 | 33(41.2)                     |
| yes                            | 120 (60.3)   | 46(60.5)                 | 47(58.8)                     |
| <b>Number of children:</b>     |  |                          |                              |
| 1                              | 32 (26.7)  | 15(32.6)                 | 12(25.0)                     |
| 2                              | 60 (50.0)  | 20(43.5)                 | 24(50.0)                     |
| 3                              | 19 (15.8)  | 11(23.9)                 | 6(13.0)                      |
| ≥4                             | 9 (7.4)  | -                        | 5(12.0)                      |
| <b>Illness:†</b>               |  |                          |                              |
| yes                            | 132 (66.3)   | 56(73.7)                 | 49(37.2)                     |
| no                             | 65 (32.7)  | 20(26.3)                 | 29(62.8)                     |
| <b>Medication:‡</b>            |  |                          |                              |
| yes                            | 82 (41.2)  | 34(44.7)                 | 30(38.5)                     |
| no                             | 115(57.8)  | 42(55.3)                 | 48(61.5)                     |
| <b>Psychological problem:§</b> |  |                          |                              |
| yes                            | 28 (14.1)  | 11(14.9)                 | 14(17.9)                     |
| no                             | 165 (82.9)   | 63(85.1)                 | 64(82.1)                     |

\*The total sample consists of physicians, nurses and other allied health workers.

†Based on the response to the question: "Do you have any illness?". In the event respondents answered "yes," they were directed to indicate their illness from a list that included sleep disorder, hypertension, headache, perspiration, diabetes, stomach-ache, bodyweight change, and others.

‡Based on the response to the question "Do you use any medication?".

§Based on the response to the question: "Have you ever/Are you currently being treated for a psychological problem?".

Correlation between the dimensions of burnout and emotion work was examined to check for overlap (Table 3). Emotional exhaustion and depersonalization were moderately correlated with display of negative emotions and with emotional dissonance, while personal accomplishment was moderately correlated with display of positive emotions and sensitivity-sympathy requirements. Among regulation possibilities, only emotion control was correlated with personal accomplishment, and this correlation was low.

### Burnout among nurses and physicians

No significant differences were found between nurses and physicians on any burnout scale (Table 4). Thus, the first hypothesis was not confirmed. However, nurses did report higher scores on emotional exhaustion and depersonalization subscales, while physicians reported higher scores on personal accomplishment scale.

### Differences in emotion work between nurses and physicians

Nurses experienced significantly higher emotional dissonance, lower interaction control, and lower emotion control than physicians (Table 4). They also reported different

**TABLE 2.** Descriptive statistics for the subscales examined in the total sample of health care workers in Hungary\*

| Instrument (score range)                                   | Number of items | Mean ± standard deviation | Cronbach α |
|--|-----------------|---------------------------|------------|
| <b>Burnout (Maslach Burnout Inventory):*</b>               |                 |                           |            |
| Emotional exhaustion (0-63)                                | 9               | 22.31 ± 11.33             | 0.87       |
| Depersonalization (0-30)                                   | 5               | 5.30 ± 6.90               | 0.67       |
| Personal accomplishment (0-48)                             | 8               | 38.13 ± 7.83              | 0.83       |
| <b>Frankfurt Emotion Work Scales – Hungarian version:†</b> |                 |                           |            |
| Display of positive emotions (10-50)                       | 10              | 37.21 ± 5.91              | 0.82       |
| Display of negative emotions (9-45)                        | 9               | 16.70 ± 4.71              | 0.80       |
| Sensitivity and sympathy (6-30)                            | 6               | 23.85 ± 4.02              | 0.85       |
| Interaction control (3-15)                                 | 3               | 8.93 ± 2.54               | 0.62       |
| Emotion control (3-15)                                     | 3               | 11.30 ± 2.60              | 0.72       |
| Emotional dissonance (4-20)                                | 4               | 10.78 ± 3.49              | 0.84       |

\*Maslach and Jackson (36).

†Kovács et al (37) and Zapf et al (38).

regulation requirements than physicians: demand for sensitivity and sympathy when interacting with patients was less often required from nurses than from physicians. Significantly more physicians reported that display rules were imposed on them by their boss ( $P < 0.001$ ) or in educational seminars ( $P < 0.001$ ), while significantly more nurses reported that these were self-imposed ( $P < 0.001$ ). So, the analyses confirmed the second hypothesis.

### Emotion work as a stressor in the burnout process

To investigate the third and fourth hypothesis, regression analysis was used (Table 5). Three different regression models were employed to explore the full diversity of the effects using different sets of variables. Model 1 investigated whether dimensions of health care professionals' emotion work predicted burnout. Emotional dissonance, display

of negative emotions or interaction, and emotion control had strong effect on burnout. This supported our hypothesis that emotional dissonance, as a dimension of emotion work, predicted burnout. Model 2 investigated whether other work- and health-related variables predicted burnout. Work experience was inversely related to two dimensions of burnout – emotional exhaustion and depersonalization. This showed that burnout did not increase with the years of work experience. The number of clients per week predicted burnout dimensions as well. Psychotherapeutic hours per week predicted personal accomplishment. Surprisingly, working hours per week did not predict burnout. Among mental health variables, illness was inversely related to personal accomplishment.

Model 3 investigated whether socio-demographic variables predicted burnout. Education predicted personal ac-

**TABLE 3.** Pearson correlation coefficients for association between burnout syndrome and emotion work in a sample of health care workers in Hungary

|                                  | Dimensions of burnout syndrome |                   |                         |
|----------------------------------|--------------------------------|-------------------|-------------------------|
|                                  | emotional exhaustion           | depersonalization | personal accomplishment |
| <b>Regulation requirements:</b>  |                                |                   |                         |
| Display of positive emotions     | -0.07                          | 0.02              | 0.32*                   |
| Display of negative emotions     | 0.25*                          | 0.33*             | -0.05                   |
| Sensitivity-Sympathy             | -0.05                          | -0.02             | 0.24*                   |
| <b>Regulation possibilities:</b> |                                |                   |                         |
| Emotion control                  | -0.04                          | 0.11              | 0.20 <sup>†</sup>       |
| Interaction control              | -0.08                          | -0.00             | -0.01                   |
| <b>Regulation problem:</b>       |                                |                   |                         |
| Emotional dissonance             | 0.35*                          | 0.21*             | -0.13                   |

\* $P < 0.01$ .

<sup>†</sup> $P < 0.05$ .

**TABLE 4.** Means and standard deviations for the Maslach Burnout Inventory and Frankfurt Emotion Work Scales – Hungarian version subscales in the groups of nurses and physicians

| Scale (score range)  | Subscale score (mean ± standard deviation) |               |        |
|--|--|---------------|--------|
|  | nurses                                     | physicians    | $P^*$  |
| <b>Burnout (Maslach Burnout Inventory) subscales:<sup>†</sup></b>                              |  |               |        |
| Emotional exhaustion (0-63)  | 24.01 ± 11.48                              | 21.49 ± 10.53 | 0.166  |
| Depersonalization (0-30)   | 6.28 ± 9.32                                | 5.06 ± 4.71   | 0.317  |
| Personal accomplishment (0-48)   | 36.77 ± 9.29                               | 38.90 ± 5.99  | 0.118  |
| <b>Emotion work (Frankfurt Emotion Work Scales – Hungarian version) subscales:<sup>‡</sup></b> |  |               |        |
| Display of positive emotions (10-50)   | 37.27 ± 6.62                               | 37.00 ± 4.74  | 0.787  |
| Display of negative emotions (9-45)  | 17.12 ± 5.91                               | 17.05 ± 3.95  | 0.941  |
| Sensitivity and Sympathy (6-30)  | 23.11 ± 4.06                               | 24.71 ± 3.45  | 0.010  |
| Interaction control (3-15)   | 8.57 ± 2.25                                | 9.35 ± 2.62   | 0.060  |
| Emotion control (3-15)   | 10.62 ± 2.88                               | 12.19 ± 2.03  | <0.001 |
| Emotional dissonance (4-20)  | 11.63 ± 3.43                               | 10.10 ± 3.42  | 0.007  |

\*Independent  $t$ -test for two independent samples.

<sup>†</sup>Maslach and Jackson (36).

<sup>‡</sup>Zapf et al (38).

TABLE 5. Linear regression estimates to identify predictors of burnout (standardized  $\beta$  coefficients)

|   | Dimensions of burnout syndrome |                     |                         |
|---|--------------------------------|---------------------|-------------------------|
|   | emotional exhaustion           | depersonalization   | personal accomplishment |
| <b>Model 1:</b>                           |                                |                     |                         |
| Display of positive emotions              | -0.247 <sup>†</sup>            | -0.50               | 0.313 <sup>†</sup>      |
| Display of negative emotions              | 0.247 <sup>†</sup>             | 0.332*              | -0.81                   |
| Emotional dissonance                      | 0.401*                         | 0.194 <sup>‡</sup>  | -0.209 <sup>‡</sup>     |
| Interaction control                       | -0.162 <sup>‡</sup>            | -0.114              | 0.036                   |
| Emotion control                           | 0.117                          | 0.202 <sup>‡</sup>  | 0.134                   |
| Sensitivity and sympathy                  | 0.007                          | -0.111              | 0.139                   |
| constant                                  | 17.52 <sup>‡</sup>             | -3.892              | 15.587 <sup>‡</sup>     |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.277* (0.242)                 | 0.186* (0.148)      | 0.192* (0.152)          |
| <b>Model 2:</b>                           |                                |                     |                         |
| psychotherapeutic hours per week          | 0.235 <sup>§</sup>             | 0.085               | -0.316 <sup>‡</sup>     |
| years of work experience                  | -0.586*                        | -0.421 <sup>†</sup> | -0.172                  |
| work hours per week                       | -0.047                         | 0.088               | 0.031                   |
| number of clients                         | 0.313 <sup>‡</sup>             | 0.351 <sup>‡</sup>  | 0.210                   |
| number of clients interacting emotionally | -0.026                         | -0.141              | -0.001                  |
| illness                                   | -0.061                         | 0.000               | -0.328 <sup>‡</sup>     |
| medication                                | 0.051                          | 0.144               | 0.072                   |
| psychiatric problem                       | 0.271 <sup>§</sup>             | 0.083               | 0.134                   |
| constant                                  | 17.446 <sup>‡</sup>            | 2.711               | 39.631*                 |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.348 <sup>‡</sup> (0.226)     | 0.206 (0.062)       | 0.219 (0.070)           |
| <b>Model 3:</b>                           |                                |                     |                         |
| sex                                       | -0.073                         | -0.071              | -0.003                  |
| marital status                            | 0.082                          | -0.024              | 0.026                   |
| children                                  | 0.059                          | 0.002               | -0.051                  |
| education                                 | -0.022                         | -0.039              | 0.194 <sup>†</sup>      |
| age                                       | -0.362 <sup>†</sup>            | -0.166 <sup>§</sup> | 0.062                   |
| constant                                  | 38.193*                        | 13.583*             | 29.682*                 |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.107* (0.081)                 | 0.039 (0.011)       | 0.046 (0.017)           |

\* $P < 0.001$ .  
<sup>†</sup> $P < 0.01$ .  
<sup>‡</sup> $P < 0.05$ .  
<sup>§</sup> $P < 0.1$ .

complishment and age predicted emotional exhaustion and depersonalization ( $P=0.084$ ). This stresses that burnout does not increase with age. It seems that education may influence personal accomplishment, which means that educational level can be interpreted as a protective factor.

Regression analysis was carried out to compare physicians with nurses (Table 6). In Model 1, applied to physicians, 3 subscales of emotion work were described as predictors. Similarly to the results obtained with the total sample, emotional dissonance, display of negative emotions, and showing sensitivity and empathy related to burnout. Furthermore, emotion control strengthened the feeling of emotional exhaustion, and interaction control decreased

personal accomplishment. In nurses, emotional dissonance affected two dimensions of burnout. Similarly as in physicians, subscales of emotion work in nurses also affected burnout, except sensitivity and sympathy requirements. Although the predictors seem to be similar for the two occupational groups, slight differences were found.

In Model 2, work- and health-related variables were included and their effects were compared between the two occupational groups. Working experience was a significant predictor of burnout in physicians. Working hours per week were predictor of depersonalization and personal accomplishment in nurses, although they did not work significantly more or less than physicians. Other factors may predict burnout in nurses (Table 6), eg, psycho-

**TABLE 6.** Linear regression estimates to identify predictors of burnout in physicians and nurses separately (standardized  $\beta$  coefficients)

|   | Dimensions of burnout syndrome |                            |                            |
|---|--------------------------------|----------------------------|----------------------------|
|   | emotional exhaustion           | depersonalization          | personal accomplishment    |
| <b>Physicians</b>                         |                                |                            |                            |
| <b>Model 1:</b>                           |                                |                            |                            |
| Display of positive emotions              | 0.175                          | 0.003                      | 0.024                      |
| Display of negative emotions              | 0.380 <sup>†</sup>             | 0.428 <sup>†</sup>         | 0.096                      |
| Emotional dissonance                      | 0.366 <sup>†</sup>             | 0.317 <sup>†</sup>         | -0.168                     |
| Interaction control                       | -0.150                         | 0.016                      | -0.272 <sup>§</sup>        |
| Emotion control                           | 0.235 <sup>§</sup>             | 0.170                      | 0.121                      |
| Sensitivity and sympathy                  | 0.249 <sup>‡</sup>             | 0.018                      | 0.261 <sup>§</sup>         |
| constant                                  | -28.227                        | -14.731                    | 26.971 <sup>†</sup>        |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.322 <sup>†</sup> (0.234)     | 0.302 <sup>†</sup> (0.212) | 0.150 (0.034)              |
| <b>Model 2:</b>                           |                                |                            |                            |
| psychotherapeutic hours per week          | 0.088                          | 0.023                      | 0.115                      |
| years of work experience                  | -0.489 <sup>†</sup>            | -0.350 <sup>§</sup>        | -0.182                     |
| work hours per week                       | -0.187                         | -0.013                     | 0.138                      |
| number of clients                         | 0.125                          | 0.177                      | 0.268                      |
| number of clients interacting emotionally | 0.114                          | 0.071                      | 0.187                      |
| illness                                   | 0.132                          | 0.313                      | 0.191                      |
| medication                                | -0.474 <sup>‡</sup>            | -0.415                     | -0.424                     |
| psychiatric problem                       | 0.348 <sup>‡</sup>             | 0.062                      | 0.046                      |
| constant                                  | 29.677                         | 7.999 <sup>‡</sup>         | 40.573 <sup>*</sup>        |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.446 (0.282) <sup>‡</sup>     | 0.278 (0.065)              | 0.280 (0.050)              |
| <b>Model 3:</b>                           |                                |                            |                            |
| sex                                       | -0.120                         | -0.228 <sup>‡</sup>        | -0.015                     |
| marital status                            | 0.128                          | 0.083                      | 0.129                      |
| children                                  | 0.048                          | 0.076                      | -0.181                     |
| education                                 | -0.006                         | 0.026                      | -0.087                     |
| age                                       | -0.486 <sup>†</sup>            | -0.360 <sup>†</sup>        | 0.055                      |
| constant                                  | 43.932                         | 5.441                      | 70.909                     |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.199 <sup>†</sup> (0.142)     | 0.147 <sup>‡</sup> (0.085) | 0.036 (-0.038)             |
| <b>Nurses</b>                             |                                |                            |                            |
| <b>Model 1:</b>                           |                                |                            |                            |
| Display of positive emotions              | -0.006                         | 0.005                      | 0.271                      |
| Display of negative emotions              | 0.171                          | 0.350 <sup>‡</sup>         | -0.061                     |
| Emotional dissonance                      | 0.383 <sup>‡</sup>             | 0.000                      | -0.264 <sup>§</sup>        |
| Interaction control                       | -0.259 <sup>§</sup>            | -0.175                     | 0.144                      |
| Emotion control                           | 0.170                          | 0.320 <sup>‡</sup>         | 0.109                      |
| Sensitivity and sympathy                  | -0.119                         | -0.024                     | 0.223                      |
| constant                                  | 16.489                         | -8.641                     | 4.222                      |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.277 <sup>‡</sup> (0.179)     | 0.188 (0.082)              | 0.263 <sup>‡</sup> (0.158) |
| <b>Model 2:</b>                           |                                |                            |                            |
| psychotherapeutic hours per week          | 0.376                          | -0.690 <sup>‡</sup>        | 0.641                      |
| years of work experience                  | -0.715 <sup>‡</sup>            | -0.137                     | -0.739                     |
| work hours per week                       | -0.093                         | 0.648 <sup>‡</sup>         | -1.433 <sup>§</sup>        |
| number of clients                         | 0.428                          | 0.427                      | -0.163                     |
| number of clients interacting emotionally | 0.125                          | -0.593 <sup>§</sup>        | 1.013                      |
| illness                                   | 0.085                          | -0.003                     | -0.791 <sup>§</sup>        |
| medication                                | 0.690 <sup>†</sup>             | 0.860 <sup>†</sup>         | 0.150                      |
| psychiatric problem                       | 0.087                          | -0.469 <sup>‡</sup>        | 1.021 <sup>§</sup>         |

**TABLE 6.** Continued. Linear regression estimates to identify predictors of burnout in physicians and nurses separately (standardized  $\beta$  coefficients)

| Nurses                                    | Dimensions of burnout syndrome |                            |                         |
|---|--------------------------------|----------------------------|-------------------------|
|   | emotional exhaustion           | depersonalization          | personal accomplishment |
| constant                                  | 1.961                          | 1.780                      | 56.276 <sup>§</sup>     |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.978 (0.921) <sup>‡</sup>     | 0.985 (0.945) <sup>‡</sup> | 0.884                   |
| <b>Model 3:</b>                           |                                |                            |                         |
| sex                                       | 0.104                          | 0.071                      | -0.121                  |
| marital status                            | -0.047                         | -0.121                     | 0.082                   |
| children                                  | 0.049                          | -0.071                     | -0.107                  |
| education                                 | -0.143                         | -0.021                     | 0.245 <sup>§</sup>      |
| age                                       | -0.315 <sup>§</sup>            | -0.104                     | 0.323 <sup>§</sup>      |
| constant                                  | 35.847 <sup>†</sup>            | 8.939                      | 23.534 <sup>†</sup>     |
| R <sup>2</sup> (adjusted R <sup>2</sup> ) | 0.100 (0.027)                  | 0.046 (-0.031)             | 0.142 (0.068)           |

\* $P < 0.001$ .† $P < 0.01$ .‡ $P < 0.05$ .§ $P < 0.10$ .

therapeutic hours per week or the number of clients per week with whom the nurses interact emotionally. Among mental health variables, using medications and having psychiatric problems were associated with burnout in nurses. In physicians, using medication and having illnesses were associated with emotional exhaustion.

In Model 3, socio-demographic variables were investigated. It is remarkable that burnout did not increase with age in either occupational group. In nurses, education predicted personal accomplishments and in physicians sex predicted burnout.

## DISCUSSION

Our study showed that Hungarian health professionals had higher scores on emotional exhaustion and personal accomplishment scales but lower on depersonalization than those from other countries (22-24).

We did not find differences in the level of burnout between nurses and physicians, similar to the findings of Ogresta et al among mental health workers (15). Other studies have detected such differences. Some reported that physicians had higher burnout levels than nurses (14), while other reported the opposite (13). Since there is no consensus in the contemporary literature, further analyses are necessary.

The mean score for emotional exhaustion in this study ( $22.3 \pm 11.3$ ) was slightly lower than in a study on Hungarian health care staff ( $24.7 \pm 6.2$ ) (39). Physicians' score for

emotional exhaustion in our study was  $21.5 \pm 10.5$ , slightly higher than  $18.8 \pm 11.2$  in Ádám et al's study (40). Physicians score for depersonalization in our study ( $5.1 \pm 4.7$ ) was similar to that reported by Ádám et al ( $5.1 \pm 5.0$ ). In contrast, nurses' score for depersonalization ( $6.3 \pm 9.3$ ) was lower than that reported by Piko ( $9.4 \pm 3.3$ ) (39). Compared with previous studies, our study found higher level of personal accomplishment among physicians ( $38.9 \pm 5.9$  vs  $35.5 \pm 7.9$ ) (40) and among nurses ( $36.8 \pm 9.3$  vs  $27.4 \pm 4.4$ ) (39).

Differences between nurses and physicians were found for emotion work variables, supporting our second hypothesis, which dealt with regulation possibilities. Nurses experienced less emotion control and interaction control than physicians. They also felt that they had little impact on their working conditions and the decisions made, and that they therefore possessed less job control. The feeling of control can be interpreted as the demonstration of autonomy. We believe that nurses feel that they have less autonomy than physicians in the hierarchical health care system. This may be due to traditional work roles, which still prevail in Hungary. Interestingly, physicians were more frequently informed about display rules by their boss or in educational seminars than were nurses. It may be that these rules function as a norm when employees receive them from a trustworthy source and successfully internalize them. It may be easier for an employee to follow such rules than when they are self-imposed. Although nurses reported less control over social interactions with clients than did physicians, they felt greater autonomy in the way these interactions were regulated by display rules. This



is because they imposed display rules upon themselves. Nurses reported fewer regulation requirements involving demands for sensitivity and sympathy and more regulation problems regarding emotional dissonance.

These findings underline the importance of dealing with nurses and physicians separately. Nurses' job involves many routine tasks (eg, doing prescriptions), which can be carried out using scripts. Even though regulation requirements were low, nurses felt that they were more frequently required to express emotions not genuinely felt in a particular situation. It seems that job demands (emotional regulation requirements) were more characteristic of physicians' work, while work-related stress (emotional dissonance) was more characteristic of nurses' work.

Concerning our third hypothesis that emotion regulation-related requirements (display of positive, negative emotions, sensitivity, and sympathy requirements) and regulation problems (emotional dissonance) associate with burnout, the literature shows that regulation problems and regulation requirements were strong predictors of burnout (2,26,29,31). However, regulation possibilities also played a significant role in predicting burnout. Regression analysis was used to determine which work-related variables predicted burnout. Years of working experience and the number of clients per week were the most important factors predicting emotional exhaustion and depersonalization. Piko (39) reported similar outcomes regarding education level. Age was a negative predictor of emotional exhaustion, so younger nurses may experience more burnout than senior ones, as suggested by the meta-analysis of Brewer and Shepard (12) and by Garossa et al (7).

The present findings should also be discussed in terms of strengths and limitations of the study. Burnout has been extensively studied in different occupations, but only a few studies are published on Hungarian samples (39,40). This is the first Hungarian study dealing with the influence of emotion work on burnout. Also, we used a validated FEWS instrument in Hungarian. On the other hand, a limitation is the use of self-reported measures and the cross-sectional design, which does not allow us to establish causal relationships among study variables and limits our ability to make generalizations about the total population from this sample. The second limitation is the low response rate (30%), which may also decrease the generalizability of the results. Our rate is lower than that reported by Ádám et al (about 76%) and Piko (45%), though it is slightly higher than that reported by Zapf et al in hotel staff in 2001

(29%) (26,39,40). Further work is needed to explore emotional job demands in greater depth.

The present study underscores the role of emotion work and its predictive impact on burnout in a health care setting. Intervention aimed at involving emotional regulation in the burnout process may be effective in reducing the risk for burnout. Our study highlights profession-specific points that should be taken into account when developing prevention and intervention programs. The focus in nurses should be on stressors and emotional dissonance, while in physicians it should be on work requirements and display and regulation of negative emotions. Our results also underscore the need for preventive training, especially for young professionals with less working experience, who are at high risk for burnout, and for nurses, who are at a high risk for emotional dissonance.

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