original article

Occupational stress and burnout among polish psychiatric nurses

Ewa Wilczek-Ruzyczka
Krakow University of Andrzej Frycz Modrzewski
Marta Kalicinska
Warsaw School of Social Sciences and Humanities

Occupational stress is a major factor related to burnout among medical staff (Escriba-Aguir, Martin-Baena, & Perez-Hoyos, 2006). Studies of occupational stress have been based on various theoretical approaches, such as the Job Demand-Control model (Theorell & Karasek, 1996), and the Effort-Reward Imbalance (ERI) model (Siegrist, Li, & Monteno, 2004). The ERI model emphasizes the non-reciprocal social exchange between costs and gains at work and over-commitment which may lead to emotional distress and its health consequences. According to this model, the effort at work is a part of social exchange in which rewards are represented by money, esteem career opportunities and job security (Siegrist et al., 2014).

Previous studies have shown that the burnout of medical personnel is a result of the interaction of personality- and work-related factors (e.g. work overload, task complexity and ambiguity) (Castledine, 1998; Chapman, 1998; McVicar, 2003; Chopra, Sotile, & Sotile, 2004; Piko, 2006; Garrosa, Moreno-Jimenez, Liang, & Gonzalez, 2008; Maccacaro et al., 2011). Furthermore, occupational stress has been identified as the major factor associated with burnout (Karasek & Theorell, 1990; Escriba-Aguir, Escriba-Aguir, Martin-Baena, & Perez-Hoyos, 2006; Selmanovic et al., 2011).

Burnout Among Nursing Staff

Professional burnout is defined as a psychological response to chronic work stress (Maslach & Jackson, 1982). According to Maslach (2000, 2003), burnout is the sequence of three dimensions: (1) emotional exhaustion, (2) depersonalization, and (3) reduced personal accomplishment. The types of demands experienced by nurses are related to the specific work settings and may vary according to the nursing specialty. Therefore, findings concerning nurses in general need to be validated according to the specific work setting of nurses.

Burnout and Effort Rewards Imbalance Model Among Psychiatric Nurses

Burnout and negative effort-reward imbalance (ERI) have been associated with high absenteeism and turnover (van Vegchel, de Jonge, Meijer, & Hamers, 2001; Hasselhorn, Müller, & Tackenberg, 2005). However, there is still little known about ERI and burnout among nurses employed in different settings and working conditions. To the best of our knowledge, no previous studies have compared burnout and the effort-reward profiles of Polish mental health care nurses. One potential reason why burnout among psychiatric nurses represents an understudied area may be the fact that this professional group is relatively small. Moreover, previous studies dealing with burnout-related issues seemed to center around the nurses exposed to more acute stress; namely surgical nurses and nurses employed at intensive care units (ICU). Nevertheless, the working conditions of psychiatric wards are related to high levels of stress and work strain (Messenzehl

et al., 2006; Schulz et al., 2009).

The aim of this study was to investigate the levels of effort-rewards imbalance and burnout, as well as the relationship between ERI and burnout among Polish psychiatric nurses. We hypothesized that psychiatric nurses present intermediate to high levels of burnout and effort-rewards imbalance ratio (H1); nurses working on 12-hour shifts will show higher levels of burnout and ERI ratio than their peers working on 8-hour shifts (H2); the burnout of psychiatric nurses is associated with their level of efforts and rewards at work (H3); and gender, marital status, having children, educational level, working time and working practice moderate the relationship between the burnout and ERI presented by psychiatric nurses (H4).

Methods

The cross-sectional questionnaire survey conducted in 2012 included 380 psychiatric nurses from Southern Poland, who are working in psychiatric hospitals, which have agreed to take part in research. The response rate was 92% (342 female nurses and 8 male nurses).

Because of disproportion between male and female nurses in our sample, final analyses were prepared only on female nurses (N=342). The study followed the ethical guidelines of the Polish Psychological Association. Permission to distribute the questionnaires for the study was obtained from hospital authorities. Participation in the study was voluntary and anonymous.

The level of burnout was assessed using the Polish version of the Maslach Burnout Inventory (MBI) (Pasikowski, 2000).

In our study the Cronbach's alpha for the subscale of Emotional Exhaustion was 0.88, for Depersonalization $\alpha = 0.69$ and for Personal Accomplishment $\alpha = 0.79$. The level of effort-reward imbalance at work was measured with the Polish version of the ERI questionnaire (Pająk, 2002) and calculated according to the formula: e/(r X c) where 'e' is the sum score of the effort scale, 'r' is the sum score of the reward scale and 'c' defines a correction factor for different numbers of items in the nominator and denominator. The correction factor is 0.454545. A value close to zero indicates a relatively low effort and high reward, values beyond 1.0 indicate a high amount of effort and low rewards received. The reliability of the subscales were satisfactory (reward scale $\alpha = 0.78$; effort scale $\alpha = 0.75$)

Prior to the analyses, all the variables were screened for normality. The relations between dichotomous variables were tested using chi-square test, and associations between interval and quantitative variables with the Kruskal-Wallis and Mann-Whitney U-test, respectively. Correlations between pairs of variables was tested using Eta indicator for categorical data and Spearman test for continuous data. In order to analyze the role of the effort-rewards imbalance as a predictor of the burnout, a series of multiple regression analyses were conducted.

Results

Psychiatric nurses included in this study presented low to moderate levels of burnout. 44.7% presented low levels of Emotional Exhaustion, 33.3% average levels, and 22.0% high levels. In the case of Depersonalization 53.5% showed low levels, 30.7% average and only 15.8% high level of this dimension of burnout. Low levels of Personal Accomplishment was reported by 96.5% of nurses. These data only partially support our Hypothesis 1. Contrary to our predictions, psychiatric nurses did not report high levels of burnout but nearly a half of them were characterized by high levels of ERI (48.2%).

Table 1
Emotional Exhaustion, Depersonalization, ERI and Marital Status (N=342)

Model	Emotional Exhaustion			Depersonalization		
	β	Δ R^2	ΔF	β	Δ R^2	ΔF
Step 1		.05	16.77***		.05	16.77***
ERI	.27***			.22***		
Step 2		.00	.048		.00	.05
ERI	.27***			.22***		
Marital Status	.08			.01		
Step 3		.02	6.99**		.02	6.99**
ERI	.47			.42		
Marital Status	.087			.02		
ERI x Marital Status	−.256**			−.23**		

Intergroup Comparisons

The chi-square revealed only one significant difference in the levels of Depersonalization presented by psychiatric nurses working 8 hours and 12 hours per shift (χ^2 = 7.66; p < 0.05). Therefore, the Hypothesis 2 was not confirmed. We did not find significant differences in the levels of burnout, effort, rewards and effort-rewards imbalance with regard to age and working experience.

We observed several significant correlations between MBI scores and ERI scores. Emotional Exhaustion is related to Efforts (r_s = 0.54, p < 0.001) and Rewards (r_s = -0.27, p < 0.001), similarly as Depersonalization (respectively r_s = 0.30, p < 0.001; r_s = -0.29, p < 0.001). Personal Accomplishment was correlated only with level of Efforts (r_s = 0.18, p< 0.01), therefore Hypothesis 3 was only partly confirmed.

Multiple Regression Analysis

The results of multiple regression analyses only partially supported Hypothesis 4. The level of effort-rewards imbalance was a significant predictor of Emotional Exhaustion and Depersonalization (Tables 1 – 3). We did not find a significant association between ERI and Personal Accomplishment scores. Only working time and educational level were associated with Depersonalization. However, inclusion of these variables did not improve the determination coefficients of the respective regression models.

Although Emotional Exhaustion and Depersonalization were moderated by interactions between ERI, Marital status, Family situation and Educational level, these interactions did not improve the determination coefficients the regression models. Similarly, although the interactions between ERI and Working time or Age turned out to be the predictors of Emotional Exhaustion, inclusion of the interaction effects did not improve the goodness of fit of the regression model. The level of Depersonalization was not predicted by any demographic and working conditions-related variables or their interactions with ERI. Therefore, the findings of this study only partially supported Hypothesis 4.

Discussion

The results of this study only partially supported Hypothesis 1. 47% of nurses presented

Table 2
Emotional Exhaustion, Depersonalization, ERI and Family Situation (N=342)

Model	Emotional Exhaustion			Depersonalization		
	β	Δ R^2	ΔF	β	Δ R^2	ΔF
		.07				
Step 1			26.11***		.05	16.83***
ERI	.265***			.22***		
		.003				
Step 2			1.18		.00	1.39
ERI	.266***			.22***		
Family situation	.056			−.06		
Step 3		.011	4.09*		.03	11.54**
ERI	.426***			.47***		
Family situation	.06			−.06		
ERI x Family Situation	−.19*			−.32**		

with effort to rewards imbalance ratio >1 pointing to their likely exposure to high levels of occupational stress. Further analyzes confirmed a relationship between occupational stress and burnout (Hypothesis 2). Greater occupational stress was associated with higher levels of Emotional Exhaustion, Depersonalization and Personal Accomplishment, and the effort-reward imbalance ratio was a significant predictor of the burnout level. In contrast, similar to previous studies (Halbesleben & Demerouti, 2005), we did not find a relationship between the level of occupational stress and Personal Accomplishment.

Work overload is one of the most common occupational stressor of nurses (McVicar, 2003; Garrosa et al., 2008), and burnout and job dissatisfaction are more prevalent in hospitals with higher patient-to-nurse ratios (Aiken, Clarke, Sloane, Sochalski, Silber, 2002). Nurses working on 8- and 12-hour shifts did not differ in terms of their occupational stress and burnout levels, except from Depersonalization, which was higher among nurses working on 12-hour shifts. This suggests that working stress and burnout are determined by other factors than the working

Table 3
Emotional Exhaustion, Depersonalization, ERI and Educational Level (N=342)

Model	Emotional Exhaustion			Depersonalization		
	β	Δ R^2	ΔF	β	Δ R^2	ΔF
Step 1		.07	26.16***		.046	16.88***
ERI	.27***			.22***		
		.007				
Step 2			2.49		.011	4.10*
ERI	0.26***			.22***		
Education	−.082			0.11*		
Step 3		.043	16.87***		.042	16.12***
ERI	.533***			.49***		
Education	−.066			.12*		
ERI x Education	.34***			.33***		

time.

Demographic characteristics are postulated to be important determinants of burnout among nurses (Chopra et al., 2004; Maccacaro et al., 2011). However, aside from a few exceptions, demographic variables, working conditions and their interactions with ERI, did not predict burnout in our nurses. Therefore, the findings of this study only partially supported our Hypothesis 4.

Limitations

The study was cross-sectional, which does not allow one to conclude on a direction of the analyzed relationships. Secondly, only the self-reported measures were analyzed which might result in a common method bias. Finally, the study was based on the convenience sample and therefore both its results and conclusions may be limited.

Conclusion

Our findings suggest that the level of burnout presented by Polish psychiatric nurses is not moderated by their demographic characteristics and working conditions. The level of effort-rewards imbalance was associated with Emotional Exhaustion and Depersonalization. Therefore, the subjective non-reciprocal social exchange between costs and gains at work and over-commitment is more important for the evolution of working stress leading to burnout than the objective factors associated with living and/or working conditions. This suggests that the subjective experience of work plays an important role in the exchange between expected efforts and given rewards for nurses.

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Ewa Wilczek-Ruzyczka
Faculty of Psychology and Humanities, Krakow University of Andrzej Frycz Modrzewski, Krakow, Poland
ewaroz0@poczta.onet.pl

Marta Kalicinska
Warsaw School of Social Sciences and Humanities, Warsaw, Poland
marta.kalicinska@o2.pl