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THE ROLE OF REWARDS AND DEMANDS IN BURNOUT AMONG SURGICAL NURSES

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Abstract
Objective: Job rewards have both, an intrinsic and an extrinsic motivational potential, and lead to employees' development as well as help them to achieve work goals. Rewards can balance job demands and protect from burnout. Due to changes on the labour market, new studies are needed. The aim of our study was to examine the role of demands and individual rewards (and their absence) in burnout among surgical nurses. **Materials and Methods:** The study was conducted in 2009 and 2010 with 263 nurses who worked in surgical wards and clinics in hospitals in Southern Poland. The hypotheses were tested by the use of measures of demands and rewards (Effort-Reward Imbalance Questionnaire by Siegrist) and burnout syndrome (Maslach Burnout Inventory). A cross-sectional, correlational study design was applied. **Results:** Nurses experienced the largest deficiencies in salary and prestige. Exhaustion was explained by stronger demands and lack of respect (large effect). Depersonalization was explained by stronger demands, lack of respect and greater job security (medium effect). Reduced personal achievement was explained by more demands and greater job security (small effect). **Conclusions:** Excessive demands and lack of esteem are key reasons for burnout among surgical nurses. Job security can increase burnout when too many resources are invested and career opportunities do not appear. These results may help to improve human resource management in the healthcare sector.

Key words:
Demands, Job security, Rewards, Professional burnout, Surgical nurses

INTRODUCTION

Poland is a post-transformation country where significant changes have occurred on the labour market. The most important changes concern commercialization of medical institutions and introduction of work for hire in place of contracts of employment for medical staff. Deterioration of job security, insufficient pay rises and extended working hours are a commonplace. As a result, Poland still has one of the lowest ratios of employed nurses per 1000 inhabitants in the EU. Almost 75% of nurses are aged between 36 and 55 [1]. For some time, one have been able to observe the lack of experienced nurses or the tendency to replace experienced nurses with new ones. One can also observe an increase in the ratio of nurses leaving their profession [2]. One of the most important reasons for leaving nursing profession is burnout syndrome [3,4].

Burnout syndrome

According to Maslach's [5,6] multidimensional approach, burnout syndrome comprises emotional exhaustion,

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depersonalization and reduced personal accomplishment. Emotional exhaustion is recognized as a key aspect of burnout [6,7]. It is a sense of loss of energy for work, irritability, psychosomatic symptoms and fatigue which is difficult to regenerate. Depersonalization is a distanced and hostile approach both to clients and co-workers [5,8]. Reduced personal accomplishment is connected with a decrease in the sense of professional efficacy and lack of success at work. It is most closely connected with job satisfaction. Some researchers consider it to have a different character, not resulting from organizational factors [9,10]. Research has proved that professional burnout depends on individual characteristics such as neuroticism and negative affectivity. However, susceptibility to professional burnout is a result of dealing with a complex, ambivalent and hostile organizational environment [13,14].

Burnout is particularly important in medical professions, where it can reduce professional effectiveness of the staff and, consequently, pose a threat to patients' safety [15,16]. Burnout indirectly affects job satisfaction, intention to leave a profession or absence from work [2,4,17–19]. Depersonalization is the best predictor of the nurses' intention to leave the profession. Emotional exhaustion also plays an important, yet more secondary, role [20].

Job Demands-Resources model

The antecedents of burnout syndrome are excessive demands in the workplace and insufficient resources offered. These are the two general categories in the job demands-resources model [21]. Job demands refer to physical, psychological, social and organizational aspects of work such as work pressure, unfavourable physical environment and emotionally demanding interactions with clients. Physical and mental efforts used at work by employees are the response to these demands [21,22].

Job resources refer to physical, social, psychological and organizational aspects of the job that are conducive to achieving work goals, reducing job demands and their costs, as well as stimulating personal growth and development [21]. Resources can minimize the negative effects of excessive job demands and protect the workers' well-being, which is particularly sensitive to changes [23,24]. Job resources can be located at macro organizational level (e.g. salary, career opportunities and job security), the interpersonal level (e.g. supervisor support), the specific job position (e.g. role clarity) and at the level of task (e.g. task identity, autonomy and feedback) [25]. This study focused on the macro organizational level with different types of rewards. Rewards are among the most important organizational resources [26]. They include respect, job promotion, development, salary as well as job security [22]. Job rewards have both, an intrinsic and an extrinsic motivational potential, and lead to employees' development as well as help them to achieve work goals [27,28].

Previous studies have shown that nurses feel frustration with regard to rewards. They are not satisfied with salary levels, slow job promotion and insufficient respect they receive at work [29]. Similarly to nurses from other European countries, Polish nurses put a lot of effort at work. However, in return, they receive lower rewards than nurses in other countries [19]. This concerns not only the salary but also job security and fair treatment [30]. Low income and slow job promotion are the factors that annoy Polish nurses the most [31].

Demands, rewards and burnout

Excessive demands intensify professional burnout more than insufficient resources [4,9]. They have greater impact on emotional exhaustion [17,32–34]. Demands on medical staff are also made by patients [24]. The study by Aiken et al. [35] revealed that work overload among nurses caused by each additional patient increases emotional exhaustion by 23% and decreases job satisfaction by 15%. This view is in line with the Conservation of Resources Theory [36], which stipulates that demands have the strongest correlation with exhaustion and a weaker one with

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depersonalization. Moreover, the results have shown that demands have a direct role in emotional exhaustion and an indirect role in depersonalization [20,37]. Primarily, it is the mechanism of energy depletion that is in question here [21]. This mechanism results in a deterioration of employees' health.

In the nursing profession organizational resources are very rarely connected with emotional exhaustion. Depersonalization is directly enforced by a low sense of meaningfulness of work, lack of esteem at work, limited autonomy and, to a lesser extent, by receiving little support from the supervisor [20,38]. In line with the job demands-resources model, rewards have motivational potential and can lead to a greater engagement, lower depersonalization and a better work performance [21]. Insufficient rewards, however, are connected with reduced personal accomplishment [6,17,32].

Insufficient respect and esteem are connected with growing depersonalization, reduction of personal accomplishment, reduced job satisfaction, and are a cause of increased absenteeism among nurses. The sense of prestige, on the other hand, reinforces job satisfaction among surgical nurses [39], while support from supervisors lowers depersonalization [20]. The length and frequency of absenteeism among medical staff is connected with insufficient respect from supervisors and colleagues [40]. Recognition and career opportunities have a strong impact on burnout among nurses [41–43], whereas a decent salary increases job satisfaction [39]. Financial rewards reinforce personal accomplishment [32] but they have no effect on absenteeism [40]. Owing to the changes observed on the labour market, job insecurity is becoming increasingly significant. Organizations change rapidly and employees need to learn new skills and gain new knowledge in order to keep their jobs [43]. A study encompassing 16 European countries showed that job insecurity is connected with poor health, regardless of age, sex, education or economic status [44]. Polish and Slovakian nurses reported concern about their employment security and, compared to the nurses from other European countries, were less willing to leave the profession [19,43].

The problem of demands and rewards in the context of burnout is important among surgical nurses. Heavy psychological and physical demands are made on them [45]. Compared to other professions, there is a direct and immediate relationship between the effectiveness of their work and patients' safety [35]. In previous research it has been shown that the risk of an occurrence of a medical error is connected with burnout and excessive demands [46,47]. So far, relatively few studies have concentrated on rewards in the context of the demands-resources model. Also, insufficient studies have been carried out among surgical nurses. When considering the changes in the labour market, it is important to evaluate which of the rewards are of particular significance with respect to professional burnout. Job-related factors have a strong influence on how demands and rewards are perceived and evaluated by employees [45]. In this study we focus on the organizational perspective. From a practical point of view, it can be transferred to work management and maintenance of good work quality [42].

OBJECTIVE

The aim of our study was to examine the role of demands and individual rewards (and their absence) in burnout among surgical nurses. The following questions and hypotheses were formulated.

Firstly, which of the rewards do the surgical nurses perceive to be the most deficient? Secondly, how strong is the influence of demands and rewards on burnout among surgical nurses?

Hypothesis 1. In line with the energy loss mechanism in the job demands-resources model [21], we assume that demands will be more significant with regard to burnout than rewards.

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Hypothesis 2. In line with the motivational mechanism in the job demands-resources model [21], we suspect that depersonalization will relate to a greater extent to rewards rather than to demands.

Hypothesis 3. In line with other authors [6,17,25], we assume that the reduced personal accomplishment will be most strongly related to the low rewards received, but that this effect will be small.

MATERIALS AND METHODS

Participants

A cross-sectional, correlational study was conducted among nurses employed in different surgical wards and clinics in hospitals in Southern Poland (Kraków area) between May 2009 and July 2010. 265 questionnaires were filled in by surgical nurses. Two cases were excluded from the study due to missing data. The final group, in total, consisted of 263 surgical nurses, aged 36.5 on average (SD = 7.23; range: 23–58) and with an average tenure of 15 years (SD = 7.87; range: 1 – 37 years). There were 9 men (4%) in the research group. They were not excluded from further analysis because this shows the specific nature of this profession. In Poland, men represent 2% of all registered nurses (Main Chamber of Nurses and Midwives, 31.12.2011). Just over two-thirds of the respondents (68%) were married. They were college graduates (47%) or university graduates (31% with a bachelor's degree, 22% with a master's degree). Most of them (82%) worked in a day–night rotation schedule. The others worked on fixed-term dayshifts. Most frequently, they worked 12-hour shifts rather than on 8-hour shifts.

Participation in the study was voluntary. Information about the study was distributed by another author of the study. Before completing the questionnaires, nurses had been informed of the possibility of withdrawing from participation in the study at any stage of it. The nurses gave their written consent to participate in the study. The questionnaires were completed anonymously and submitted directly to the researcher.

Measures

Job demands and rewards were measured by means of the Effort-Reward Imbalance Questionnaire [48], in Polish version by Pająk [49]. The scale of demands comprises six items ($\alpha = 0.76$). It describes subjective feelings connected with general professional demands which refer to general and physical effort, time pressure, overtime, obstacles and responsibility, e.g.: I have a lot of responsibility in my job. The answers were estimated on a scale of one to five. The higher the score, the higher the demands at work and the greater the effort expected from the surgical nurses.

The scale of rewards comprised 11 items. A three-factor model of rewards was applied. The first type of reward is esteem (4 items, $\alpha = 0.69$, sample item: I am treated unfairly at work), the second type is job promotion and salary (4 items, $\alpha = 0.64$, sample item: My job promotion prospects are poor), and the third one is job security (3 items, $\alpha = 0.64$, sample item: My job security is poor). Responses were also given on the scale of 1 to 5. The rewards were considered more frustrating along with the scores on the scale getting higher.

Professional burnout was measured using Pasikowski's Polish version of Maslach's Burnout Inventory [50]. The scale lists nine questions assessing emotional exhaustion ($\alpha = 0.89$), 5 items measuring depersonalization ($\alpha = 0.67$) and 8 questions concerning personal accomplishment ($\alpha = 0.73$). Responses were made on a 7-point scale (0 meaning never, 6 meaning every day). A higher score in emotional exhaustion and depersonalization and a lower score in personal accomplishment meant a higher level of burnout.

Data analysis

Data was analysed using STATISTICA 10.0. In order to assess the relationship between variables, Pearson's r cor-

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relation coefficient was used. Bonferroni adjustment was allowed as it enables control over type 1 error [51]. The differences in perception of rewards were assessed by means of the Student's t-test. The effect size of these differences was calculated with Cohen's d coefficient [52]. Next, a series of regression analyses were performed separately for three outcome variables: emotional exhaustion, depersonalization and personal accomplishment (hypotheses 1–3). In order to assess the effect size of these relationships, Cohen's f^2 was calculated [52]. If the number of independent variables is 4, the desired statistical power is 0.80 and the anticipated effect size will be small ($f^2 = 0.05$). The minimum required sample size should be 242.

RESULTS

Descriptive statistics of the analysed variables and the correlational coefficients between them are presented in Table 1. All variables met the criteria of normal distribution. Skewness and kurtosis were acceptable (ranging from –0.09 to 0.75 and from –0.99 to –0.11 respectively).

Demands, rewards and all components of burnout correlated with one another to a various extent i.e. from weakly to moderately. These associations were statistically significant, also after considering Bonferroni adjustment. Job insecurity was an exception as it did not bear any significance for depersonalization and personal accomplishment.

Table 2 shows rewards in detail.

Nurses experienced the greatest deficiencies in salary and prestige. Promotion prospects, work prospects and support were another source of frustration. Nurses rated job security most positively. Insufficient esteem and job promotion were on a similar level ($t(524) = –1.83$, $p = 0.067$). Job security was significantly better assessed than the esteem ($t(524) = 6.44$, $p < 0.001$) and was similar to job promotion and salary ($t(524) = 8.47$, $p < 0.001$). Using Cohen's d, it was established that the effect size was medium ($d = 0.56$) and large ($d = 0.74$) respectively. The results confirmed that a deficiency in appreciation as well as in job promotion and salary are significantly more important than job insecurity in the surgical nurses' subjective judgment.

Next, a series of regression analyses were performed for all components of burnout (Table 3). In order to assess the strength of these relationships, Cohen's f^2 was calculated.

Demands and esteem explained emotional exhaustion. These two variables explained 29% of variance of emotional exhaustion ($F(2, 259) = 54.93$, $p < 0.001$). The effect

Table 1. Descriptive statistics and correlation coefficients between variables

Variables	Descriptives (N = 263)		Pearson's correlation coefficients					
	M	SD	1	2	3	4	5	6
1. Excessive demands	2.98	0.85						
2. Lack of Esteem	2.78	1.06	0.50					
3. Lack of job promotion and salary	2.94	0.95	0.40	0.65				
4. Job insecurity	2.15	1.17	0.34	0.27	0.28			
5. Exhaustion	2.46	1.17	0.52	0.41	0.31	0.26		
6. Depersonalization	1.66	1.03	0.37	0.40	0.28	0.04^{ns}	0.66	
7. Personal accomplishment	3.78	0.96	–0.21	–0.24	–0.20	0.04^{ns}	–0.40	–0.28

M – mean; SD – standard deviation.
ns – $p > 0.05$; other correlation coefficients are significant at $p < 0.001$ (Bonferroni correction 0.05/21 = 0.00238).

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Table 2. Job rewards – descriptive statistics

Types of job rewards	M	SD	Median	Skewness	Kurtosis
Lack of esteem					
respect and prestige	3.00	1.41	3.00	–0.25	–1.22
respect from co-workers	2.73	1.48	3.00	0.12	–1.43
support	2.76	1.50	3.00	0.09	–1.43
fair treatment	2.64	1.47	3.00	0.13	–1.41
Job insecurity					
undesirable change	2.62	1.63	3.00	0.27	–1.59
redundancies	1.93	1.51	1.00	1.17	–0.39
job insecurity	1.92	1.47	1.00	1.17	–0.31
Lack of job promotion and salary					
salary/income	4.11	1.22	5.00	–1.51	1.40
promotion prospects	2.85	1.49	3.00	0.04	–1.45
work prospects	2.76	1.34	3.00	–0.02	–1.21
occupational position	2.06	1.41	1.00	0.86	–0.80

Abbreviations as in Table 1.

Table 3. Regression summary for the three components of professional burnout

Professional burnout	β	SE β	B	SE B	t	p
Emotional exhaustion						
intercept			0.14	0.23	0.63	0.532
excessive demands	0.42	0.06	0.58	0.08	7.02	< 0.001
lack of esteem	0.19	0.06	0.21	0.07	3.15	0.002
Depersonalization						
intercept			0.16	0.22	0.74	0.460
excessive demands	0.26	0.07	0.31	0.08	3.86	< 0.001
lack of esteem	0.31	0.06	0.30	0.06	4.73	< 0.001
job insecurity	–0.13	0.06	–0.12	0.05	–2.21	0.028
Personal accomplishment						
intercept			4.40	0.21	20.62	< 0.001
excessive demands	–0.25	0.06	–0.29	0.07	–3.95	< 0.001
job insecurity	0.13	0.06	0.12	0.05	2.04	0.043

β – standardized regression coefficient; B – unstandardized regression coefficient; SE – standard error; t – the Studen'st t-test.

size was large ($f^2 = 0.43$). The relationship between demands and emotional exhaustion was significantly stronger than the relationship between esteem and emotional exhaustion (partial correlation Pearson r = 0.37 and Pearson r = 0.16, respectively). We confirmed hypothesis 1, i.e. that demands have the greatest significance in the

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intensification of emotional exhaustion among surgical nurses and that the significance of rewards is smaller, concerning only respect and esteem.

Next, the relation between depersonalization and demands and rewards was assessed. The analysis showed that the factors significant for depersonalization were demands and two types of reward: esteem and job security. These variables explained 20% of variance of depersonalization ($F(3, 258) = 22.97$, $p < 0.001$). The effect size was moderate ($f^2 = 0.27$). Hypothesis 2 was partly confirmed. Depersonalization is more dependent on esteem than on demands. On the other hand, job security was more weakly correlated with depersonalization. Contrary to the expectations, this relation had an inverse direction from what had been expected. Along with growing job security, depersonalization intensified among surgical nurses.

Finally, regression analysis for personal accomplishment was performed. Demands and job insecurity together explained 5% of variance of reduced personal accomplishment ($F(2, 259) = 8.05$, $p < 0.001$). However, this effect was small ($f^2 = 0.06$). We did not confirm hypothesis 3. Excessive job demands and increased job security reduced surgical nurses' sense of personal accomplishment.

DISCUSSION

To our knowledge, this is the first study among Polish surgical nurses verifying the role of demands and various types of rewards on burnout. Our results showed that emotional exhaustion depended, above all, on job demands and, to a lesser degree, on insufficient esteem. Depersonalization was connected with insufficient esteem, excessive demands and, to a lesser degree, with greater job security. Nurses' reduced sense of personal accomplishment was connected with greater job security and excess demands. Excess demands and lack of esteem were key factors causing burnout among surgical nurses.

Deficiency in respect and esteem, together with job promotion and salary, were significantly more considerable than job insecurity. These results are in line with the results of another study showing that nurses experience the greatest frustration in the case of these two particular types of rewards [29,31]. The results of a study conducted by Włodarczyk and Tobolska [53] showed that nurses assess their work performance better than it is assessed by doctors and patients. They also expect more respect than thay receive. Therefore, the reward of respect is particularly deficient because with this regard nurses themselves have high expectations.

To be more specific, the greatest frustration concerned salary and prestige. This type of reward is most strongly connected with job satisfaction [34,39]. Previous research demonstrated that the salaries and prestige of Polish nurses were significantly lower than in other European countries [19,30]. It is worth emphasizing that in Poland nursing profession enjoys deep social appreciation, although nurses themselves do not consider it as such [53]. We assume that this dissonance appears as a result of nurses comparing nursing with other medical professions. Nurses might realize that doctors enjoy a much higher level of social appreciation. This is expressed not only in salary disproportions but also in the fact that nurses are sometimes not treated fairly in the medical team.

Despite changes on the labour market, the surveyed surgical nurses had a sense of job security. Perhaps this results from the specific character of this group working mainly in public hospitals. These are institutions where the rules of economics are currently in the early stages of implementation.

The main purpose of this study was to assess the role of demands and rewards in the shaping of burnout syndrome. The most significant effect was noted for emotional exhaustion, which depended on excessive job demands and, to a lesser degree, on inadequate esteem. This is in compliance with the results of earlier studies pointing out that excessive demands are a key reason for the increase

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in emotional exhaustion [17,20,24,34]. This is where the energy loss mechanism operates, possibly leading to the health deterioration [4,21]. This results from the need to bear excessive physiological costs and the cost of compensation for excessive effort in response to demands [36]. Moreover, in this study emotional exhaustion correlated with job security (see Table 1). According to Laszlo's results [44], this can help anticipate the health costs of the process of energy depletion. Insufficient respect and esteem also had an influence (although weaker) on the intensification of emotional exhaustion in surgical nurses. It may be that this resource is very difficult to protect and retain if other strengths are exploited.

Depersonalization was related to insufficient respect and excessive demands and, to a lesser extent, to a greater job security. As we expected, similarly to Jourdain and Chênevert's study [20], insufficient respect was responsible for intensification of distanced attitudes in professional relationships of the nurses. According to Maslow's approach [54], the need to belong and the need for appreciation and respect are two of the most important human needs. It can be assumed that the weaker the sense of respect, the stronger the sense of alienation from a professional group.

We observed increased significance of excessive demands in relation to depersonalization. Our interpretation is similar to Diestel and Schmidt's [7]. Nurses with high depersonalization experience a situation in which the demands are excessive because they feel alienated at work. For that reason, their depersonalization deepens and they do not recognize it as a maladaptive coping mechanism. Furthermore, demands have an indirect influence on depersonalization [20]. This may be the reason for the considerable role of demands in intensification of depersonalization in this study. Depersonalization is an effect of the process of deterioration of professional motivation [21,25].

An interesting result is the inverse direction of dependence between job security and depersonalization compared to respect and depersonalization. The greater the job security, the deeper the depersonalization. It can be assumed that nurses who sense weaker job security may feel threatened, and for this reason they become more engaged in work and are more motivated. In order to remain employed, they may activate more effective coping strategies, particularly in interpersonal relations. This is where the mechanism of resource mobilization can be observed [36]. Nevertheless, it can be effective only for a short time because the process of resource exploitation proceeds simultaneously.

In contrast to what had been expected, the reduced personal accomplishment is not only associated with the rewards. Demands had greater significance than job security. Here again, the direction of this relation was not as expected. It is possible that some nurses can compensate for the lack of a sense of job security by assessing their own competency and professional achievements more positively. This is a mechanism of cognitive dissonance reduction in order to maintain the view of self-esteem [55]. Additionally, the fact that nurses have a job despite growing employment insecurity can increase their self-esteem. Perhaps they really appreciate themselves only in this context. However, the most probable explanation is in line with the Conservation of Resources theory [36]. Polish nurses are among professional groups which have intensively improved their occupational competency in recent years. This was the result of legislative changes. Unfortunately, continuous learning does not transfer itself into either career progression or financial success. Nurses incurred considerable financial and personal costs, which did not yield the expected results. Nurses cannot leave their poor but stable job because the labour market is insecure. In this situation, job security depends on depersonalization and reduced personal accomplishment.

Our results demonstrate that excessive demands reduce personal accomplishment. We would like to propose an explanation in the context of maintaining standards and

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quality of work. It is possible that excessive number of demands cause inaccurate task completion. Despite one's best intentions, the effort spent does not allow one to maintain proper quality of work. It seems that nurses notice that in these conditions patient safety is not adequately ensured.

Limitations

This paper has some limitations. Firstly, correlative design was applied. Consequently, one cannot conclude in terms of cause-effect relationships. However, the obtained results about the role of job security in relation to burnout show that further longitudinal research is required. Secondly, in this study variables were examined only subjectively, excluding objective data, such as physiological parameters. This is particularly important in the assessment of the development of emotional exhaustion. Thirdly, participation in the study was voluntary. This is why spreading the results over the entire professional group of nurses should be done with caution.

Practical implications

The present study also reveals practical conclusions. Summing up, it has to be emphasized that excessive demands have always been important for the intensification of burnout syndrome in surgical nurses. Among the rewards, esteem plays the most important role, thus affecting depersonalization and, to a lesser extent, emotional exhaustion. From the executive point of view, these are clear guidelines for managing medical staff. In the specialities directly connected with the safety and well-being of patients it is necessary to slow down the rate of increase of demands. This will make it possible to limit the processes of fatigue, resource depletion and difficulties with their reconstruction. This is important because the number of nurses working professionally in relation to the needs of society may prove inadequate [1]. Secondly, staff management can be improved by more frequent use of non-material rewards. This can reinforce work motivation among nurses [27]. As the sense of feeling appreciated and respected as well as social relationships can boost self-esteem and, above all, lead to the improvement in professional performance, thus it is possible to enhance employees' psychological well-being this way [36,56,57].

CONCLUSIONS

This is a study which broadens knowledge about the role of demands and rewards in burnout among surgical nurses in the context of the Polish labour market. Various types of rewards were introduced at the macro organizational level. Rewards of respect and esteem are a promising strategy for managing and reducing negative consequences of work. These types of resources do not increase an organization's functioning costs but are more closely connected with the culture of work. This study shows that job security may increase burnout, particularly if considerable efforts invested by nurses are almost obligatory and do not bring the expected profits. Conversely, lack of job security can be mobilizing if in a short-term perspective. Interest in the role of job security in the development of professional burnout should be continued. Applying good practices to protect employees' health and well-being, along with efficient organization of work, may help in the management of human resources in the healthcare sector.

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