OPINION OF NURSES OF INTERNAL MEDICINE WARDS REGARDING FACTORS DETERMINING THEIR WORK – OBSERVATIONAL AND CROSS-SECTIONAL STUDIES

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SUMMARY

Objectives: The aim of the study was to assess the factors determining the work of nurses in internal medicine departments.

Methods: The study was multicentre, cross-sectional, and observational. The selection of the research group was intentional. The subject of the study were 209 nurses working in 11 internal medicine departments in 10 hospitals in the region of southern Poland.

Results: The number of patients cared for by one nurse, nurses' participation in the decision-making process, and nurses' age were shown to be direct predictors of emotional exhaustion. The number of patients cared for by a single nurse, nurses' participation in the decision-making process, and age were direct predictors of depersonalization. It was shown that significant ($p < 0.05$) independent (multivariate analysis) variables of the job satisfaction subscale were information on support for nurses at work by managerial staff and nurses' participation in the decision-making process. After analysing the impact of socio-demographic factors on the nurses' working environment, it was found that the participation of nurses in the decision-making process was significantly lower in the youngest group than in the other age groups ($p = 0.006$).

Conclusions: Participation of nurses in the decision-making process is a direct determinant of occupational burnout. A higher number of patients under the care of a nurse, lack of participation in the decision-making process and a higher age of nurses are predictors of emotional exhaustion and depersonalization.

Key words: burnout, nurses, work environment, staffing

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INTRODUCTION

The working environment is an integral part of the professional functioning of every employee. It provides the context to be taken into account when analysing various issues related to the performance of work. Research on shaping the work environment and adapting it to the needs of employees, and the relationships between people and the work environment, are of interest to many scientific disciplines in various aspects (1). Working conditions are all factors occurring in the work environment resulting from the work process and its performance. In certain situations, they may be burdensome or pose a threat to the health of employees (2).

Among the known factors that constitute a burden on nursing positions, the following groups should be mentioned:

- material working conditions: characterized by organizational aspects at the workplace, including the shift system of working time, its arrangement and provision of resources necessary for operation and the physical features of the working environment (temperature, humidity, noise, lighting, radiation), biological factors (contact with infectious material) and chemicals (disinfectants, etc.);
- type of work performed: mental and physical work, intensity and duration, monotony, monotype;
- specificity of tasks resulting from the organizational role;
- role conflict in the therapeutic team, work methods (difficulty of tasks), speed of decisions, time pressure, working position, contact with suffering, death, operation of specialized equipment;
- interpersonal relations: communicating with various people in the organization and with patients and their families. Treatment or care is not possible if at least partial communication does not occur. Communication is an essential element, among other reasons, to obtain the patient's consent to perform medical activities (3);

- organizational climate and culture: recognized values in the organization, prestige of the profession, cooperation, conflicts, position of nurses;
- employee development opportunities or their lack: lack of motivation and opportunities for development and improvement.

The working conditions of this professional group according to the Nurse Education Transformation Programme are mainly influenced by:

- physical load: related to the standing, tilted position, walking, lifting and moving patients, specific microclimate, high noise level of the equipment used;
- mental burden resulting from: responsibility for performed procedures, large flow of information, speed of decisions made – often in situations where the patient's life is at risk, atmosphere of suffering and dying;
- work in constant motion: applies to work on Saturdays, Sundays and holidays, in shifts requiring the availability of staff;
- relatively high education and continuous professional development required.

Factors such as individual personality predispositions, the nurse's health, family situation, lifestyle, and others that individually determine how the nurse feels and copes with the workload are also important for the degree of difficulties and overcoming workloads at work (4).

However, one of the most important factors that affect the work environment of nurses is their job satisfaction (5). The lower the satisfaction with the profession, the greater the risk that the nurse will resign from the profession or place of work. In order to prevent this phenomenon, it is necessary to analyse the factors that affect job satisfaction or dissatisfaction among nursing staff, and to determine how these elements may contribute to the intention to resign from the current workplace (6).

As an important feature of the healthcare work environment that contributed to professional burnout among nurses and has a negative impact on patient care outcomes, Aiken et al. (7) identified staffing inadequacy. It has been shown that the ability of hospitals to recruit and retain staff (primarily nurses) varies depending on environmental and organizational factors, including the location of the workplace, competitive environment or hospital ownership (8).

Over the last ten years, a significant achievement in research on the issue of nurse burnout was the publication of a systematic review (9). The results of this review showed a "relationship between working conditions and emotional exhaustion and overall burnout among nurses" (9). These results suggest a correlation between psychosocial work conditions and the development of emotional burnout.

People working in positions that imply frequent and intensive contact with other people (10) may experience the occupational burnout syndrome. The aetiology of this syndrome can encompass various factors such as ethical distress, psychological and spiritual challenges that result in the perception of overwhelming job demands, and stressors associated with the occupational setting, both physical and mental (10). Burnout symptoms begin to appear when the nurse does not know how to adapt to or cope with high levels of stress (11).

Nurses represent a group with an increased risk of occupational burnout (12). Research has demonstrated a relationship between coping strategies and job contentment with the prevalence of occupational burnout and its symptoms in the context of nursing practice (12).

In health care, the effects of burnout negatively affect both employees and organizations, and also reduce the quality of care and patient safety. Nurses starting work and studying at the same time experience high levels of stress at work (13) and are particularly vulnerable to burnout in the early stages of their careers when they learn to cope with the demands of a new professional role. Early occupational burnout in nursing is associated with reduced work efficiency of nurses, including job dissatisfaction, and deterioration of mental and physical health (12, 13). Occupational burnout in nurses also has a negative impact on treatment outcomes, including quality of care, healthcare-associated infections, and other adverse events (13).

Adverse events in healthcare facilities can affect two groups of victims. The first is the patient (and possibly his family), and the second is the involved healthcare professional. However, very little attention is paid in the literature to healthcare professionals affected by adverse events, especially in terms of helping and coping with reactions to medical errors or adverse medical events (7, 8).

The complexity of the problem makes research on the assessment of nurses' working conditions and determining factors multifaceted. By taking into account the variables that condition these factors, they can contribute to identifying the most important ones that can be changed both in the short and long term. As the work of nurses in hospital wards may be different due to the specificity of care and a number of different interventions, it seems that internal medicine wards can be a good basis for assessing the work environment. The aim of the study was to evaluate the factors determining the work of nurses in internal medicine departments.

MATERIALS AND METHODS

The study was planned as a multicentre, cross-sectional, and observational research with an intentional selection of the research group. The subjects of the study were 209 nurses who worked in 11 internal medicine departments in 10 hospitals in the southern region of Poland. The study was designed to include all nurses currently working in the internal medicine ward during the duration of the study. The number of employed nurses adhered to the minimum standards for the employment of nursing staff in preventive wards, which is in accordance with the index of 0.6 per each contracted bed.

After obtaining the consent of the Bioethical Committee (No. 1072.6120.11.2019 of January 31, 2019), the hospital directors were approached for their consent, while the participation of the nursing staff in the study was voluntary. The research was conducted between June 2019 and January 2020. For the sake of clarity, this study uses a simplified notation of individual units selected for the study. The research material is described using the following notation: hospital 1, hospital 2, hospital 3, hospital 4, hospital 5, hospital 6, hospital 7, hospital 8, hospital 9, hospital 10, and hospital 11.

In order to be eligible for the study, nurses were required to have at least one year of full-time work experience in the internal medicine ward. Exclusion criteria included a lack of consent to

participate in the study, working in a ward other than internal medicine, work experience of less than one year, and part-time employment. The nurses were provided with oral information regarding the purpose and principles of the study, and they voluntarily agreed to participate.

The research employed a diagnostic survey method, using a questionnaire to gather data. It was a multicentre, cross-sectional, and observational study that intentionally selected participants meeting specific criteria. The study utilized a standardized nurse professional satisfaction survey tool, which consisted of three standardized tools: the Practice Environment Scale of the Nursing Work Index (PES-NWI) (14), the Maslach Burnout Inventory (MBI), and one question sourced from the Medical Office Survey on Patient Safety questionnaire developed by AHRQ (15).

The atmosphere in the ward could be examined using other tools, such as the "Department Atmosphere Scale". Nevertheless, it was decided to abandon this approach, mainly due to the burden on nursing staff associated with the analysis of a large number of surveys. However, it is worth emphasizing that the authors are considering the possibility of using this tool in the future, which may provide additional valuable information about the atmosphere in the ward.

To investigate the influence of work environment factors on occupational burnout, the study aimed to examine the association between the subscale of the MBI in the Nurse Professional Satisfaction Survey questionnaire and the work environment conditions measured using a specific question (A3) from the PES-NWI questionnaire. The question inquired about the nurses' assessment of the adequacy of their work conditions in the hospital, including staffing levels, availability of technical resources, relationships with co-workers, and support from superiors.

The survey used the PES-NWI questionnaire, which contained five aspects to evaluate the work environment conditions of the nursing staff: adequacy of employment, nurse-doctor cooperation, support from management, participation of nurses in hospital management, and support for the quality of nursing care. Respondents were asked to select one answer for each statement. Nursing workload was assessed based on the number of employed nurses, the number of patients in the ward, patients under the direct care of one nurse, and non-professional duties performed during the last shift. Job satisfaction was assessed based on the subjective opinion of nurses regarding working conditions, including sufficient staff, technical resources, support from superiors, and relations with co-workers. Human resources were assessed based on the total assessment of four questions from the PES-NWI subscale that evaluated the adequacy of nursing staff resources. The Maslach Burnout Inventory was used to assess occupational burnout, which had three subscales: emotional exhaustion, depersonalization, and professional satisfaction. The study included socio-demographic data, working environment conditions of the nursing staff, and the occurrence of adverse events as independent variables, while the dependent variable was the occupational burnout of the nursing staff. The survey also included questions about potential intentions to leave work due to dissatisfaction and preferences for choosing a new job.

Statistical Analysis

The collected data were analysed using a statistical software package, R (version 4.2.2 for Windows, R Core Team (2022); R: a language and environment for statistical computing, R Foundation for Statistical Computing, Vienna, Austria). Linear regression was used to examine the influence of multiple variables on the dependent variable. Both single-factor and multi-factor analyses were conducted, and the resulting regression model parameters were presented with a 95% confidence interval. All potential predictors were included in the analysis, as the subjects per variable (SPV) ratio was high at approximately 12.3. A significance level of 0.05 was adopted, meaning that p values below 0.05 were considered significant.

RESULTS

The survey was conducted in a group of 209 nurses employed in internal medicine wards for over one year and full-time. In the analysed study, the majority of respondents were women 99.52% (n = 208), men constituted 0.48% (n = 1) of the respondents. Due to the small number of men in the study group, the term "nurses" was adopted in the further part of the paper to refer to the group of male and female nurses participating in the study. The youngest participant in the study was 22 years old and the oldest 56 years

Table 1. *Results of occupational burnout questionnaire – Maslach Burnout Inventory conducted among nurses of internal medicine departments (N = 209)*

Aspects of occupational burnout (subscales)	Number of points	Interpretation	n	%
Professional satisfaction	0–31	Low level	88	42.11
	32–38	Medium level	68	32.54
	Over 38	High level	53	25.36
Depersonalization	0–6	Low level	106	50.72
	7–12	High level	53	25.36
	Over 12	Medium level	50	23.92
Emotional exhaustion	0–16	Low level	57	27.27
	17–26	Medium level	61	29.19
	Over 26	High level	91	43.52

old; 51.2% (n = 107) of nurses declared their place of residence as "village", and 48.8% (n = 102) of the respondents declared it as the city. The vast majority of nurses, 97.6% (n = 204) had higher education. Only 2.4% of nurses (n = 5) had secondary medical education. The shortest work experience among the surveyed people was 1 year, and the longest 46 years. Among the study group, 62.7% (n = 131) of nurses took up additional employment as a nurse. In the study group, occupational burnout was examined on the basis of three subscales: emotional exhaustion, depersonalization and professional satisfaction, the results of which are presented in Table 1.

It was shown that the number of patients under the care of one nurse, the participation of nurses in the decision-making process and the age of nurses were direct predictors or emotional exhaustion (significant in univariate and multivariate analyses). While the number of nurses, the number of other staff, relations with managerial staff and place of residence (city) were indirect factors predisposing to the occurrence of emotional exhaustion (significant in univariate analyses, but insignificant in multivariate analyses) (Table 2).

The number of patients under the care of one nurse, nurses' participation in the decision-making process, and age were direct predictors of depersonalization (significant in univariate and multivariate analyses) (Table 3).

Table 4 presents the regression analysis for the subscale of professional satisfaction of the nursing staff. It was shown that significant ($p < 0.05$) independent (multivariate analysis) variables of the job satisfaction subscale were information on support for nurses at work by managerial staff and nurses' participation in the decision-making process. The regression parameter for the statement "managers support nurses at work" was −5.04, so it lowered the score on this subscale by an average of 5.04 points in relation to the complete lack of consent. In turn, for the statement "participation of nurses in the decision-making process" the regression parameter was 4.012, so each "participation point" increased the result on this subscale by an average of 4.012 points. In turn, linear regression models (separate for each of the analysed characteristics) showed that a significant ($p < 0.05$) predictor of the result on this subscale was the participation of nurses in the decision-making process: The regression parameter is 3.719, so each "participation point" raises the result on this subscale by an average of 3.719 points.

DISCUSSION

The aim of this study was to determine the relationship between the working environment of nursing staff and occupational

Table 2. *Regression analysis of emotional exhaustion of nursing staff (N = 209)**

Feature		Single-factor models				Multi-factor model			
		Parameter	95% CI		p-value	Parameter	95% CI		p-value
Number of nurses on the last shift		−1.96	−2.92	−1.02	**< 0.001**	−0.95	−1.95	0.02	0.06
Professional relationship between doctors and nurses is good	I totally disagree	ref.				ref.			
	I partially disagree	−5.32	−14.26	3.60	0.24	−2.12	−10.59	6.36	0.63
	I partially agree	−6.06	−14.41	2.30	0.16	−1.47	−9.41	6.47	0.72
	I totally agree	−5.98	−14.65	2.70	0.18	1.15	−7.20	9.50	0.79
Total number of other personnel providing direct care to patients		−1.04	−1.78	−0.30	**0.01**	−0.32	−1.06	0.42	0.40
Managers support nurses in their work	I totally disagree	ref.				ref.			
	I partially disagree	−3.54	−9.37	2.26	0.24	−0.96	−6.63	4.70	0.74
	I partially agree	−4.24	−9.72	1.25	0.13	0.12	−5.33	5.56	0.97
	I totally agree	−8.72	−14.57	−2.90	**0.01**	−1.13	−7.44	5.17	0.73
For how many patients have you been directly responsible on your last shift?		0.36	0.20	0.52	**< 0.001**	0.22	0.07	0.38	**0.005**
Participation of nurses in the decision-making process		−7.66	−9.88	−5.44	**< 0.001**	−7.28	−9.91	−4.65	**< 0.001**
Age	Up to 30 years of age	ref.				ref.			
	31–45 years	−0.66	−5.73	4.50	0.81	3.14	−1.57	7.84	0.19
	46–55 years	1.12	−3.03	5.27	0.60	4.98	0.86	9.11	**0.02**
	Over 55	0.01	−5.19	5.21	0.10	4.80	−0.33	9.89	0.07
Education	Secondary	ref.				ref.			
	Higher	1.33	−2.66	5.33	0.52	2.54	−1.55	6.62	0.23
	Specialization	−1.58	-6.26	3.09	0.51	−0.73	-5.01	3.63	0.74
Place of residence	Village	ref.				ref.			
	City	4.27	0.99	7.55	**0.01**	2.55	-0.52	5.62	0.11

*Linear regression method; numbers in bold indicate statistically significant values.

Table 3. *Regression analysis of depersonalization of nursing staff (N = 209)**

Feature		Single-factor models				Multi-factor model			
		Parameter	95% CI		p-value	Parameter	95% CI		p-value
Number of nurses on the last shift		−0.71	−1.27	−0.15	**0.01**	−0.06	−0.62	0.50	0.83
Professional relationship between doctors and nurses is good	I totally disagree	ref.				ref.			
	I partially disagree	−3.02	−8.15	2.10	0.25	−1.70	−6.60	3.22	0.50
	I partially agree	−3.43	−8.22	1.37	0.16	−2.73	−7.33	1.87	0.25
	I totally agree	−3.35	−8.33	1.62	0.19	−1.03	−5.87	3.81	0.68
Total number of other staff providing direct patient care		−0.59	−1.01	−0.17	**0.01**	-0.34	−0.77	0.09	0.13
Managers support nurses in their work	I totally disagree	ref.				ref.			
	I partially disagree	−0.26	−3.66	3.14	0.88	1.86	−1.42	5.15	0.27
	I partially agree	−0.67	−3.80	2.59	0.71	2.98	−0.18	6.13	0.07
	I totally agree	−2.50	−5.89	0.93	0.16	1.86	−1.88	5.52	0.32
For how many patients have you been directly responsible on your last shift?		0.23	0.14	0.32	**< 0.001**	0.19	0.01	0.28	**< 0.001**
Participation of nurses in the decision-making process		−3.50	−4.91	−2.26	**< 0.001**	−2.85	−4.37	−1.32	**< 0.001**
Age	Up to 30 years of age	ref.				ref.			
	31–45 years	−2.76	−5.59	0.06	0.06	−1.64	−4.37	1.09	0.24
	46–55 years	−4.22	−6.51	−1.92	**< 0.001**	−2.90	−5.29	−0.51	**0.02**
	Over 55	−4.95	−7.82	−2.07	**0.001**	−3.44	−6.40	−0.48	**0.02**
Education	Secondary	ref.				ref.			
	Higher	3.14	0.91	5.38	**0.07**	1.39	−0.98	3.75	0.25
	Specialization	−0.17	−2.79	2.45	0.99	-0.22	−2.75	2.31	0.87
Place of residence	Village	ref.				ref.			
	City	2.20	0.31	4.09	**0.02**	0.10	−0.78	2.77	0.27

*Linear regression method; numbers in bold indicate statistically significant values.

burnout of nurses working in internal medicine wards. Equally important seems to be the influence of the characteristics of the work environment of nurses on their well-being. Scientific studies have shown that there is a relationship between low job satisfaction of nursing staff, episodes of major depression and the intention to quit work, and absenteeism at work, occupational burnout and features of an unhealthy work environment (5–7, 16).

In own research, out of 209 participants included in the analysis, 43.54% (n = 91) showed a high level of emotional exhaustion, 29.19% of the respondents (n = 61) had a medium level of emotional exhaustion, while 27.27% of nurses (n = 57) had a low level of emotional exhaustion. Out of 209 nurses participating in the study, 23.92% of respondents (n = 50) had a high level of depersonalization 50.72% (n = 106), 25.36% of nurses (n = 53) indicated a medium level of depersonalization in the questionnaire, and 25.36% of nurses (n = 53) had a low level of depersonalization. Out of 209 nurses participating in the study, 25.36% of nurses (n = 53) had a high level of professional satisfaction, 32.54% of respondents (n = 68) defined their level of professional satisfaction as medium, and 42.11% (n = 88) had a low level of professional satisfaction.

Occupational burnout was measured separately for each of the subscales: emotional exhaustion, depersonalization and professional satisfaction. The study showed that the working environment of the nursing staff (participation of nurses in the decision-making process) correlated with all subscales of occupational burnout. In addition, the number of patients under the care of one nurse had a direct impact on emotional exhaustion. The regression parameter is 0.357, so each subsequent patient increases the score on this subscale by an average of 0.357 points. In contrast, age was a direct predictor of the depersonalization subscale. In our study, we also analysed what socio-demographic factors affect the working environment of nursing staff. It was shown that the participation of nurses in the decision-making process was significantly lower in the youngest group than in the other groups. The total number of other staff providing direct care to patients was significantly greater for the speciality respondents than for the rest of the respondents.

Occupational burnout syndrome is characterized as a psychological condition resulting from prolonged exposure to work-related stressors. It can lead to feelings of exhaustion, detachment and cynicism towards work, as well as a sense of reduced accomplishment and effectiveness (15). More and more studies provide evidence that nurses are among the healthcare workers in whom the incidence of occupational burnout syndrome seems to be high, which is directly and strongly related to the characteristics

Table 4. *Regression analysis for the subscale of professional satisfaction of nursing staff (N = 209)**

Feature		Single-factor models				Multi-factor model			
		Parameter	95% CI		p-value	Parameter	95% CI		p-value
Number of nurses on the last shift		0.60	−0.15	1.35	0.12	0.23	−0.60	1.07	0.58
Professional relationship between doctors and nurses is good	I totally disagree	ref.				ref.			
	I partially disagree	2.07	−4.75	8.88	0.55	3.47	−3.82	10.80	0.35
	I partially agree	2.40	−3.90	8.78	0.46	3.09	−3.75	9.93	0.38
	I totally agree	4.43	−2.19	11.05	0.19	3.90	−3.21	11.16	0.28
Total number of other staff providing direct patient care		0.45	−0.12	1.02	0.13	0.22	−0.42	0.85	0.51
Managers support nurses in their work	I totally disagree	ref.				ref.			
	I partially disagree	−3.14	−7.70	1.38	0.18	-5.04	−9.92	−0.16	**0.04**
	I partially agree	−0.40	−4.64	3.90	0.86	-3.00	−7.69	1.69	0.21
	I totally agree	0.68	−3.85	5.21	0.77	-4.25	−9.68	1.18	0.13
For how many patients have you been directly responsible on your last shift?		−0.02	−0.15	0.12	0.81	0.03	−0.10	0.16	0.64
Participation of nurses in the decision-making process		3.72	1.91	5.53	**< 0.001**	4.01	1.75	6.28	**0.001**
Age	Up to 30 years of age	ref.				ref.			
	31–45 years	−0.38	−4.28	3.51	0.85	−2.42	−6.47	1.64	0.24
	46–55 years	−0.07	−3.23	3.09	0.96	−2.03	−5.58	1.52	0.26
	Over 55	2.55	−1.42	6.51	0.21	0.25	−4.15	4.65	0.91
Education	Secondary	ref.				ref.			
	Higher	−1.06	−4.11	1.99	0.50	−0.44	−3.95	3.08	0.81
	Specialization	1.21	−2.37	4.78	0.51	1.78	−1.98	5.54	0.35
Place of residence	Village	ref.				ref.			
	City	−0.94	−3.49	1.61	0.47	0.07	-2.57	2.72	0.96

*Linear regression method; numbers in bold indicate statistically significant values.

of their work environment (7, 16). Studies by Cimiotti et al. also showed a relationship between professional burnout of nurses and the quality and safety of care (17). Malinowska-Lipień et al. study has found a strong correlation between the evaluation of patient safety and the work environment of nurses, including aspects such as sufficient employment, nurse-doctor cooperation, support from management, opportunities for nurses to participate in hospital management, and professional development. According to these studies, factors such as adequate nursing staff, effective collaboration with doctors, management support, and professional autonomy significantly affect the way nurses assess patient safety (18). The results of our own research have shown that the age of nurses influences the level of emotional exhaustion. Younger nurses tended to have higher emotional exhaustion compared to older people. This finding is consistent with many other studies that suggest that younger people may be more susceptible to the stress of working in health care. In 2013, Basińska and Wilczek-Rużyczka identified high workload and inadequate recognition as primary contributors to burnout among surgical nursing staff (19). In the same study, the results showed that emotional exhaustion depended primarily on the demands of the employer and (to a lesser extent) on insufficient respect from the supervisor. The results of our own research confirmed that nurses' participation in the decision-making process may act as a protection factor against emotional exhaustion. Nurses who had the opportunity to influence healthcare decision-making showed lower levels of emotional exhaustion. The study also took into account the number of patients cared for by nurses. They found that nurses who had more patients under their care showed higher levels of emotional exhaustion. Depersonalization was associated with insufficient respect, excessive demands and, to a lesser extent, greater job security. Reduced sense of personal achievement of nurses was associated with greater job security and excessive demands (19).

A number of other studies on the work environment have confirmed the above observations and revealed many other aspects that may affect nurse satisfaction, including the important role of genuine leadership and team leader support for the nursing staff (13, 16). Almost all of these studies showed a strong relationship between the work environment and nurses' job satisfaction.

Several studies have found that a positive work environment is associated with fewer occupational illnesses, less burnout, and increased job satisfaction (13–16). Data published in a paper that was developed as part of the RN4CAST study, which surveyed 352 hospitals, more than 2,000 wards and nearly 23,500 nurses working in 11 countries, showed an association between a nurse's perceived adverse work environment and burnout experiences both at the ward and the hospital level (20). Studies conducted

in other countries (at the ward level) have shown that emotional exhaustion and depersonalization are inversely related to patient satisfaction, while personal achievement was positively related to patient satisfaction (9, 10, 17). Based on own research, Maslach and Jackson identified the following components influencing the appearance of professional burnout. These are emotional exhaustion, depersonalization and job satisfaction (21). In a study conducted among 390 Polish nurses and midwives during the fourth wave of the COVID-19 pandemic, it was found that a significant proportion of respondents experienced symptoms of depression, anxiety, and stress. Specifically, 23.1% of nurses showed severe or very severe depressive symptoms, while 30.3% had moderate symptoms. High to very high levels of anxiety were reported by 46.5% of respondents, and 25.8% showed a moderate level of anxiety. Additionally, 35.4% and 14.1% of nurses reported medium and high levels of stress, respectively. Given these findings, it is clear that measures must be taken to prevent further deterioration of the mental health of nurses, including targeted support strategies (22).

In our study, it was shown that the nurse's age in the range of 46–55 years is a direct predictor of both emotional exhaustion and depersonalization. For the emotional exhaustion subscale, age 46–55, the regression parameter is 4.982, so it increases the result on this subscale by an average of 4.982 points in relation to the age up to 30. On the other hand, for the subscale of depersonalization 46–55 years, the regression parameter is −2.902, so it lowers the result on this subscale by an average of 2.902 points in relation to the age up to 30. Other studies on occupational burnout among nurses indicate similar relationships. According to Dębska et al. (23), Polish nurses were significantly older than Slovak and Czech nurses and, importantly, they showed depersonalization ($p=0.055$) and a negative assessment of personal achievements ($p=0.058$). The phenomenon of nursing care rationing has been identified as a potential contributor to higher levels of emotional exhaustion and depersonalization among nursing staff in a recent study conducted in 2022 (24).

Ahmadi et al. showed that the workplace is an extremely important factor in the development of professional burnout in nurses. However, this study included nurses from a variety of clinical backgrounds. Nurses who worked in hospital emergency departments and intensive care units had significantly higher burnout scores than nurses who worked in orthopaedic departments and dialysis centres (25). It is impossible to clearly answer the question why such a relationship has not been found, especially since in many other studies researchers have come to similar conclusions as Aiken et al. (10, 12, 16). In one study conducted in the USA, it was shown that the workload and insufficient staffing can sometimes be counterbalanced by a positive nursing environment in the team (26). These studies did not directly measure the workload of nursing staff. Twigg and Duffield came to similar conclusions in their research. The authors showed that in places where nurses perceived the work environment as unfavourable, lacked resources in the form of management and unqualified staff, and the percentage of nurses with a bachelor's degree in nursing was lower, care was worse. Twigg and Duffield also showed that in such conditions nursing tasks remained unfulfilled (especially the supporting/educating ones) (27).

The limitation of this study is that it is an observational cross-sectional study. Thus, the relationship between the work environment and burnout does not create a temporal relationship. Also, the number of nurses in each ward was too small to carry out statistical analysis and comparisons of differences between wards.

CONCLUSIONS

Participation of nurses in the decision-making process is a direct indicator of occupational burnout. A higher number of patients under the care of a nurse, lack of participation in the decision-making process and a higher age of nurses are predictors of emotional exhaustion and depersonalization.

It is worth promoting the active participation of nurses in the decision-making process related to patient care. This can help reduce the risk of burnout and increase job satisfaction. There is a need to ensure appropriate working conditions for nurses so that they are not overloaded with a large number of patients. Additionally, it is worth creating a work environment that promotes nurses' participation in decision-making related to patient care, and adapting training programmes and support for older nurses to help them cope with emotional exhaustion and depersonalization.

Conflicts of Interest
None declared

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