

## Original Papers

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### Stress and burnout among oncology nurses: review study

**Abstract: Purpose:** The aim of this paper is to discuss exposure to stress and the incidence of occupational burnout among oncology nurses.

**Methods:** To study the discussed issue, we analyzed six full-text research papers which were searchable by EBSCO and met all required criteria (words included in the abstract, English publication, size of the study group).

**Results:** Exposure to chronic occupational stress may lead to developing burnout syndrome. Social service professionals are especially affected as they are expected to be emotionally engaged in their jobs, which particularly applies to such health care professionals as nurses, psychologists, police officers and social workers. Because of occupational burnout work efficiency may deteriorate. Oncology nurses are among the most affected nurse groups in terms of exposure to the risk of burnout.

**Conclusions:** Oncology nurses as well as other oncology workers exhibit an increased risk and a higher grade of burnout. Psychological training sessions are available which effectively prevent and alleviate the effects of burnout.

**Keywords:** psychological stress, burnout, cancer nurses, oncology nurses

#### Introduction

Stress should be seen as an interaction between two dimensions. The first one involves external factors called stressors, such as overwhelming events or requirements. The second dimension is shaped by the individual ability to react to stressors. Discrepancies between requirements and actual resources to meet the requirements lead to stress (Heszen, 2013).

Occupational stress is the second most common reported health problem. Over one in five workers in the European Union claim that occupational stress negatively affects their health. Besides, this phenomenon is believed to be linked with half of all absences at work.

The potential sources of stress include the conditions and organization of work, working environment and employees' individual features. The effects of occupational stress are multidirectional as they affect not only the well-being and functioning of a worker but also the regularity within the entire organization (Potocka, 2010). It is believed that stress is essential in initiating burnout.

Occupational burnout can be defined as a prolonged reaction to chronic effects of work related stressors. In

the model proposed by Maslach and Leiter – recognized researchers of burnout – a worker whose ability to effectively deal with stress is disturbed initially develops emotional exhaustion. The next step to avoid too close relationships with beneficiaries is depersonalization, which in turn generates the distance and consequently leads to indifference and objectification. This, in turn, implies lack of satisfaction or feeling of accomplishment reduces work efficiency (Anczewska et al., 2005).

Occupational burnout is far more likely to affect people who provide social services that require personal approach and close contact, i.e. tasks related to helping others. That is why nurses, doctors, psychologists, or social workers are in the group of the most affected professionals (Anczewska et al., 2005).

Nurses, and oncology nurses in particular, are exceptionally exposed to stress and the resulting occupational burnout syndrome. The psychological and physical burden resulting from working with severely ill patients coupled with low wages can cause chronic stress and increasing frustration (Uchmanowicz et al., 2013).

The concept of stress was introduced by Hans Selye. In his hypothesis, many somatic diseases are the result of

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ineffective coping with stress. It divided the stress into two types: eustress – the task of mobilization to action, and its unpleasant and sensational counterpart called distress (Łodzińska, 2010).

The beginning of stress response can be traced back to generating stress at the biochemical level. In the initiation of stress response, two mechanisms play a key role: the hypothalamic-pituitary-adrenocortical (HPA) axis and the sympathetic-adrenomedullary (SAM) system. As early as in the first minute of stressor activity, HPA activation leads to an increase in the release of catecholamine amines, preparing the body to fight or escape. SAM activation is delayed (about 30 minutes after the stressor) and prolonged, controlling the course of the stress response and influencing its activity (Landowski, 2007).

A stressor can be any stimulus, external event, or even a prediction of having inadequate resources to deal with a certain event. Currently the cognitive transactional model of stress by Lazarus and Folkman seems to be the most popular one. According to Lazarus and Folkman's theory, the aim of the coping process is eliminating or reducing stress. It has two very important roles, the first one is task-centred (removing or reducing the stressor) and the second is emotion-centred (neutralizing the unpleasant feelings) (Grygorczuk, 2008).

The theory of Lazarus and Folkman proposes that human interaction with the environment essentially consists in mutual relations, referred to as a transaction. It is subject to primary and secondary appraisals and it involves the items which are important for an individual's well-being. Each of these appraisals is accompanied by other emotions associated with it. The stress transaction can be considered as: harm/loss, threat or challenge.

When an individual considers a situation as stressful after cognitive assessment, secondary appraisal follows. It relates to prospective initiation of response aimed at eliminating the source of stress or mitigating its consequences. On the other hand, when a stress transaction is considered a challenge, it involves actions aimed at gaining available benefits. This kind of assessment addresses the causes of stress and owned resources (Heszen, 2013).

### **Stress at work and occupational burnout**

The WHO definition of well-being at work developed in the 1980s accounted for the essence of psychosocial factors in the efforts to protect the health of workers. However, stress is a ubiquitous phenomenon; it is particularly frequent in the workplace, regardless of the nature of an occupation. There are many potential stressors in the work environment. They include organization, conditions, type and working environment, interpersonal relationships, workload, time distribution, personal features etc. (Potocka, 2010). A prolonged stress response is an essential workplace-related factor in developing burnout.

The classic model of occupational burnout proposed by Maslach and Leiter involves three successive sequences. The first one is related to the development of emotional

exhaustion; it occurs when an employee is no longer able to adapt to a stressful situation. The next phase involves depersonalization, i.e. lack of commitment and excessive restraint in relation to beneficiaries and objectification of beneficiaries. This unsuccessful coping strategy leads to work dissatisfaction, reduced engagement, and a sceptical assessment of professional accomplishments.

Occupational burnout particularly affects occupational groups engaged in social services requiring close and personal contact with people who need help. Nurses, doctors or psychologists are thus affected (Anczewska et al., 2005).

It has been proven that the sense of control is related to the level of stress experienced in the workplace. People with a low sense of control show higher levels of occupational stress. It should be noted here that a full sense of control is defined as a belief that there is a relationship between an individual's actions and their consequences when the individual is free to choose the purpose of action and the means needed to achieve it. What is more, the same study revealed that lack of control was negatively correlated with job satisfaction and personal achievement, and positively correlated with mental conditions, depersonalization or emotional exhaustion (Dudek et al., 2001). This indicates a clear link to occupational burnout. This implies that nurses whose autonomy is limited in professional tasks tend to be more prone to burnout.

It has also been found that occupational burnout is associated with work-family conflict observed in health workers, police officers, psychologists or prison guards (Baka, 2011a). Employees with this type of conflict are more susceptible to occupational burnout. They also show lower levels of organizational commitment or professional achievement (Baka, 2011a).

Studies by Baka et al. indicate that occupational burnout can be attributed to both low and high professional engagement. Low involvement in work may result from interpersonal conflicts and organizational constraints, while high engagement may result from workload. The studies also showed that the level of social support is negatively correlated with occupational Burnout (Baka & Derbis, 2011b).

A study conducted on a group of trainee physicians revealed that one-point increase in three MBL (Maslach Burnout Inventory) scales resulted in an increase in reported medical errors by 7–10%. It can be concluded that Occupational burnout affects other health care workers in an analogous way (West et al., 2006).

### **Burnout in the work of nurses**

Caring for the sick or disabled can be a source of occupational stress among health care workers as their professional role requires close, emotional contact with suffering patients (Sęk, 2005). Nurses are the largest group of medical workers, and their daily work involves stressors which can cause burnout, such as profession-specific requirements, psychological strain, inadequate conditions for patient care, low wages, low professional status,

inadequate cooperation within the therapeutic team, or with patients and relatives (Kędra & Nowocień, 2015).

Oncological, pediatric or psychiatric nurses are quoted as specialties involving an elevated risk of occupational burnout (Sęk, 2005). A study conducted by Dłużewska (2012) has shown that the longer the nursing experience, the weaker the sense of responsibility for another person's life and health. It should be emphasized, however, that it is the individuals with the shortest work experience that manifest the highest number of occupational burnout symptoms. The nurses who responded to a questionnaire indicated that the least comfortable elements of their work included excessive bureaucracy, computer-related tasks, lifting patients, and non-specialist activities (cleaning, turndown services, feeding, performing a patient's toilette) (Dłużewska, 2012).

Similar observations related to nursing staff's experience and emotional exhaustion, which is a component of burnout, are made by Bielan et al. Emotional exhaustion is also influenced by mode of work: nurses working in a shift system have a higher level of exhaustion than those who only work daytime hours (Bielan et al., 2011).

### Aim

The aim of this paper is to present a review of the available literature on stress and Burnout among oncology nurses.

### Method

(according with Lenartowicz & Kózka, 2010)

Inclusion criteria adopted:

- References found on EBSCO (in full) research database.
- The search was limited to articles published between 2010 and 2016.
- Their abstract included the following phrases: "oncol\* nurs\*" and "burnout" or "stress".
- Articles were published in English,
- The database was limited to full-text and peer-reviewed reports.
- Sufficiently extended study group (at least 30 people) and the accuracy of its description.

Exclusion criteria adopted:

- Articles were not published in English or included just abstract in English.
- The studied groups were smaller than 30 people.
- The articles were published before 2010.

### Results

There were 274 abstracts in search results, of which the first 150 were reviewed for relevance. Six papers were selected that met the criteria. The results are presented in Table 1.

The key empirical work was a Canadian study (Edmonds et al., 2012) which involved interviewing pediatric, and surgical nurses, nurse managers and other

oncology staff (physiotherapists and psychologists) revealed a significant burnout rate as assessed by Maslach Burnout Inventory. One third of all respondents reported high levels of emotional exhaustion and reduced satisfaction with personal accomplishments. In contrast, a quarter of respondents reported a higher degree of depersonalization.

The study also used the General Health Questionnaire – GHQ evaluating psychological morbidity, which revealed that half of the subjects showed features of distress. The subjects underwent psychological intervention in small groups, which ended with relaxation with elements of yoga. The studied parameters were re-evaluated after a month, indicating significant improvements in emotional exhaustion and improved mental status.

Six months after the initial study, adjuvant psychological intervention was organized for a randomized group of previously studied subjects. However, due the fact that consent to participate was withdrawn by one of the hospitals, a reliable statistical analysis of the results was not possible.

The results of the whole study were evaluated seven months after its initiation. The subjects continued to exhibit lower levels of emotional exhaustion and improved mental state. Oncological pediatric nurses showed the most significant improvements in emotional exhaustion. This may be due to the fact that it the group consisted of the youngest respondents who were also the most exposed to occupational burnout. Nearly all nurses were satisfied with the intervention and hoped to repeat it in the future.

Eelen et al. (2014) analyzed a large group of oncology personnel (N=550), including nurses (N=266), also nurse specialists (N=36). This study used a Dutch adaptation of Maslach's selfassessment questionnaire to assess occupational burnout and a questionnaire to examine demographic and occupational variables. The results indicated that female gender was a factor that increased the risk of burnout, while the occupational group that showed the highest levels of occupational burnout were physicians, although they were mostly male. Nurses showed a similar level of burnout as social workers or psychologists. Specialized nurses were less prone to burnout. This can be because higher job satisfaction may be attributed to their contacts with patients being more frequent than physician-patient contacts. Also psychologists were more resistant to burnout.

In one study conducted in Turkey (Onan et al., 2013) the impact of psychological intervention on stress and burnout was analyzed in three oncological units of similar number and type of patients, as well as similar work environment and number of nurses. All studied nurses (N=30) were divided into groups that were given training in coping strategies. The training was developed in compliance with available research and consulted with specialists, including a psychiatrist, a psychiatric nurse and a pedagogue. It consisted of nine sessions, 90 minutes each.

Three questionnaires were used in this study: Das Gupta's Stress Self-Assessment Checklist, Lazarus and Folkman's Ways of Coping Inventory, and Maslach

Table 1. Levels of occupational burnout in oncology nurses assessed with Maslach Burnout Inventory

Author, year of publication	Study group	Methods	Maslach Burnout Inventory			Relevant findings
			Emotional exhaustion	Depersonalization	Personal achievements	
Davis et al. 2013 US	74 oncology nurses	Maslach Burnout Inventory, Nursing Satisfaction and Retention Survey	19.4 ± 9.9 (X ± SD) Moderate – 38% High – 22.5%	4.6 ± 4.0 (X ± SD)	40.1 ± 5 (X ± SD)	Emotional exhaustion was the lowest among the youngest nurses, and the highest among outpatient nurses. Emotional exhaustion is inversely correlated with job satisfaction. Low levels of job satisfaction are associated with the desire to leave oncological units as a work area. The sense of personal accomplishment was the highest among adult nurses.
Edmonds et al. 2012 Canada	24 nurse managers	Maslach burnout inventory (MBI), General Health Questionnaire (GHQ),	25.3 ± 10.4 (X ± SD) High 37.5%	8.7 ± 5.4 (X ± SD) High – 37.5%	35.1 ± 6.0 (X ± SD) High 37.5%	Psychological intervention significantly reduced the feeling of emotional exhaustion, which is an inherent aspect of occupational burnout, and improved GHQ levels of mental health.
	88 pediatric oncology nurses	abridged Marlowe-Crowne Social Desirability Scale	22.3 ± 9.7 (X ± SD) High 34.1%	6.1 ± 4.8 (X ± SD) High – 25.0%	35.9 ± 6.4 (X ± SD) High – 45.8%	
	37 surgical oncology nurses	[before and after psychological intervention – <i>Care for the Caregiver Program</i> ]	19.2 ± 11.8 (X ± SD) High – 27.0%	5.1 ± 4.4 (X ± SD) High – 21.6%	33.7 ± 8.8 (X ± SD) High – 43.2%	
Eelen et al. 2014 Belgium	247 oncology nurses	Maslach Burnout Inventory	1.58 ± 0.95 (X ± SD)	0.83 ± 0.63 (X ± SD)	4.43 ± 0.79 (X ± SD)	Nurse specialists showed lower levels of occupational burnout and a higher sense of personal accomplishment than nurses without specialization.
	35 oncology nurses – specialists	[Dutch version]	1.45 ± 0.95 (X ± SD)	0.59 ± 0.51 (X ± SD)	4.87 ± 0.55 (X ± SD)	
Emold et al. 2011 Israel	39 oncology nurses	Maslach Burnout Inventory, nine-item questionnaire to measure communication skills self-efficacy, Working Environment Scale	Several times a week – 30.8% Several times a month – 30.8% Once a month or less – 33.3%	Several times a week – 5.1% Several times a month – 23.1% Once a month or less – 69.2%	Several times a week – 0% Several times a month – 82.1% Once a month or less – 15.4%	High levels of emotional burnout and personal accomplishments can coexist, affecting a variety of issues, such as patient collaboration and life satisfaction. High level

Table 1. Cont.

Author, year of publication	Study group	Methods	Maslach Burnout Inventory			Relevant findings
			Emotional exhaustion	Depersonalization	Personal achievements	
Lochmajer 2015 Poland	121 oncology nurses	Maslach Burnout Inventory, empathy scale from the Popular Emotional Intelligence Questionnaire	Level of occupational burnout – $43.2 \pm 18.85$ (X $\pm$ SD) Burnout-free nurses (<24.35) = 16.53% Nurses with average burnout (24.35–62.05) = 67.77% Nurses with high level of burnout (> 62.05) = 15.7% [1 standard deviation used in the division]			of communication ability conditioned by one's own effectiveness and working environment can prevent occupational burnout.  Low empathy correlates with lack of job satisfaction. Nurses with higher education showed lower levels of occupational burnout.
Onan et al. 2013 Turkey	30 oncology nurses	Stress Self-Assessment Checklist, Ways of Coping Inventory and Maslach Burnout Inventory, Coping with Stress Training Program [as an intervention]	$17.93 \pm 7.3$ (X $\pm$ SD)	$5.68 \pm 4.3$ (X $\pm$ SD)	$21.82 \pm 4.6$ (X $\pm$ SD)	Psychological intervention contributed to alleviating the feeling of stress and burnout

Burnout Inventory. The results showed that 2/3 of the nurses were dissatisfied with their work in oncology, and almost as many indicated that work affected their family and social life. A significant decrease in symptoms of stress and emotional exhaustion was noted after training. However, in re-evaluating both variables one month after the training, only the symptoms were still at a lower level. The values of burnout components returned to the pre-training levels.

Emold et al. (2011) studied a group of 39 Israeli oncology nurses. They used Maslach Burnout Inventory, Working Environmental Scale, a Communication Skills Self-efficacy Inventory, and a Questionnaire to Assess Demographic Variables. One third of the nurses experienced emotional exhaustion several times a week, and another one third reported having the experience several times a month. There was a correlation between higher levels of emotional exhaustion and depersonalization, and self-efficacy in communication skills such as initiating a conversation with a patient about his or her anxiety, talking to a patient about a poor prognosis, or assisting a patient who deals with uncertainty associated with his or her clinical condition. There was also a negative correlation between the level of depersonalization and positive work environment.

Lochmajer (2015) examined the correlation between empathy and burnout among 121 oncology nurses. She used the Maslach Burnout Inventory and empathy scale from the Popular Emotional Intelligence Questionnaire based on Salovey and Meyer's concept. Out of all respondents, 19 (15.70%) showed a high degree of burnout, while 20 (16.63%) were free from occupational burnout. The remaining 82 (67.77%) of the nurses showed moderate levels. The researcher selected two groups: high degree of burnout and burnout-free, and examined them with the empathy scale. Reliable statistical analysis, however, did not lead to conclusions on the impact of empathy on burnout, as the level of the former was similar in both groups. What the study also demonstrated was that a lower level of education increases the risk of burnout.

One American study (Davis et al., 2015) examined 74 oncology nurses. It used a proprietary Nursing Satisfaction and Retention Survey as well as Maslach Burnout Inventory. In this study, lower levels of emotional exhaustion occurred among younger nurses, which is incompatible with the findings of other authors. Nurses working in stationary care also showed a lower level of emotional exhaustion than those who worked in outpatient facilities. It is notably connected with the fact that older nurses worked in outpatient care. There was a correlation between job satisfaction and emotional exhaustion, and the intention to quit oncology jobs.

### Discussion

Prominent level of occupational burnout among oncology staff has been reported in a number of studies. In a study conducted by Grunfeld et al. on a group of 1000 oncology employees, more than a half of physicians and

more than one third of nurses showed burnout syndrome (Grunfeld et al., 2000).

The burnout causes among nurses are multi-dimensional. Icelandic research conducted among 219 nurses indicated that job satisfaction was linked to the level of occupational stress. Working conditions were more burdensome for nurses employed hospitals than for those employed elsewhere. More hospital nurses than outpatient nurses pointed out that they rarely can take a meal break. It has also been shown, as in many other studies, that longer experience is associated with lower occupational stress (Sveinsdóttir et al., 2006). Another research conducted on a large group of 1392 Croatian nurses working in university hospitals has indicated that one of the most important stressors in the workplace is inadequate staffing levels – insufficient number of nurses. The above analysis revealed that nurses with a higher level of education were more likely to be able to work than graduates with lower education. Also, the level of stressors was different with respect to education (Golubic et al., 2009).

It has been proven that the range of responsibilities and the ability to make decisions are significant issues contributing to the development of occupational burnout among nurses. The level of occupational burnout increases when the number of responsibilities rises and when one's control of the situation is reduced. What is important in the prevention of occupational burnout is adequate preparation for the profession and including aspects of detached concern in training programmes to foster developing the ability to combine commitment and care with some degree of emotional distance (Şek, 2005).

Factors that reduce the occupational stress and burnout have been identified. Among them psychological trainings can be distinguished. Emotional intelligence has proven to be a significant moderator in the relationship between stress and burnout. Studies conducted among South African nurses indicate that high levels of emotional intelligence are related to lower levels of stress and burnout. In fact, training dedicated to enhancing the level of emotional intelligence among nurses can bring significant benefits in the prevention of burnout (Görgens-Ekermans & Brand, 2012).

The work environment study is one of the key elements to prevent burnout. Studies conducted in China indicate that programs aimed at combating occupational burnout among nurses should focus on reducing occupational stress and developing effective coping strategies. To this end, it may be helpful to analyze daily tasks in nursing positions to thoroughly explore the working environment of this occupational group. This would allow for the reconstruction of the burdensome aspects in nursing (Wu et al., 2007).

### Conclusion

The presented data indicate that the problem of occupational burnout among oncology staff, especially nurses, is an important issue. The symptoms of emotional exhaustion were observed among nurses who participated in the studies. Burnout affects an employee's well-being

and the quality of the care, which can lead to errors, reduced patient safety, and poorer therapeutic outcomes. The key issue is effective alleviation of occupational burnout effects through psychological training, which can have long-term effects if it is adequately conducted. The problem, however, requires further analysis in larger, randomized study groups. It has been shown that employees are willing to participate in such training sessions.

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