

# REGULAR AND HEALTHY NUTRITION AND GOOD SLEEP QUALITY REDUCED THE LEVEL OF OCCUPATIONAL BURNOUT IN NURSING STAFF WORKING WITH PATIENTS WITH MENTAL DISORDERS: AN OBSERVATIONAL STUDY

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A – study design, B – data collection, C – statistical analysis, D – interpretation of data, E – manuscript preparation, F – literature review, G – sourcing of funding

## ABSTRACT

**Background:** Mental health nurses are burdened with risk of occupational burnout. They are exposed to severe psychological stress because they often encounter violence, assaults, beatings, suicides, patient escapes and other difficult situations in their work.

**Aim of the study:** Analysis of occupational burnout and severity of depression symptoms among nurses working with patients with mental disorders.

**Material and methods:** In 2022, 106 members of the nursing staff working with patients with mental disorders were examined. The Maslach Burnout Inventory Questionnaire and the Center for Epidemiologic Studies Depression Scale were used.

**Results:** Respondents showed high levels of emotional exhaustion (43; 40.57%), depersonalization (30; 28.30%) and lack of personal achievement (60; 56.60%). The group of 30.19% (n=32) had symptoms of severe depression. The higher level of depression, the higher level of emotional exhaustion ( $r=0.554$ ,  $p<0.001$ ), the higher level of depersonalization ( $r=0.499$ ,  $p<0.001$ ), the lower level of job satisfaction ( $r=-0.59$ ,  $p<0.001$ ). The people with very good or good sleep quality had higher level of job satisfaction ( $p=0.001$ ), lower level of emotional exhaustion ( $p<0.001$ ) and depersonalization ( $p=0.006$ ) in contrast to people with bad quality of sleep. People who had eaten unhealthy food, had higher level of emotional exhaustion ( $p=0.02$ ) and depersonalization ( $p=0.006$ ), and lower level of job satisfaction ( $p=0.019$ ) in contrast to people who had eaten healthy food.

**Conclusions:** Healthy, regular nutrition and good quality of sleep appeared to be key determinants that reduce the level of occupational burnout. The results show how important are these factors in prevention.

**KEYWORDS:** occupational burnout, nursing, psychiatric hospitals, sleep quality

## BACKGROUND

Occupational burnout is one of the main problems related to work in professions whose common features are contact with people and emotional in-

volvement in their problems [1]. Occupational burnout is characterized by feelings of energy depletion or exhaustion, increased mental distance from one's job, feelings of negativism or cynicism related to one's job, and a sense of ineffectiveness and lack of

accomplishment [2]. Nursing is one of the professions at high risk for burnout. Within that group, mental health nurses are the most exposed to stress and occupational burnout. It's largely due to the character of their work. Psychiatric patients usually have chronic illnesses, often are not involved in the treatment process, and would rather not cooperate with medical staff, causing staff frustration. Mental health nurses actively participate in the diagnosis process of treatment and rehabilitation of mentally ill people. Therefore, nurses are burdened with the responsibility for the lives and health of other people. Moreover, nurses working with psychiatric patients are exposed to their negative emotions and aggressive behavior. That undoubtedly increases occupational stress and, therefore, the risk of occupational burnout syndrome [3, 4, 5]. For example, Rejek showed that 90% of psychiatric nurses were victims of aggressive patients, and 95% were witnesses to aggressive situations [6].

The work of psychiatric care staff is characterized by exposure to difficult job conditions, which include time pressures and intensive interactions with people. The World Health Organization pays attention to the global changes coming in the area of psychiatric care. It has observed a shortage of staff and the problem of an increasing number of patients and bad working conditions. [7]. The effects of these situations are physical and mental tiredness and exhaustion. Nursing staff experience a lack of energy to work [8].

Next, the essential problem in the work of psychiatric nurses is depression. It is one of the most common mental disorders and may involve experiencing chronic stress due to patient aggression, contact with suffering, death of the patient, or family grief [9]. For example, Opoku Agyemang showed that 19.6% of psychiatric nurses experienced mild to severe depression, 27% mild to severe anxiety, and 42% mild to high stress [10]. Personnel working with patients with mental disorders also experience mental problems, such as irritability, sadness, anxiety, fear about health, lack of concentration, difficulty sleeping, insomnia, or frequent awakenings [6].

In consideration of the fact that negative emotional states disrupt nurse-patient and nurse-coworker relationships [11], it was decided to further investigate the phenomenon of professional burnout and the severity of depression in a group of psychiatric nurses.

## AIM OF THE STUDY

Professional burnout analysis and intensity of depression symptoms among nursing staff working with patients with mental disorders.

## MATERIAL AND METHODS

### Study design and setting

An observational study was conducted from June to December 2022 among members of nursing staff working in the Province Hospital for the Neurological and Mentally Ill in Bolesławiec, the Province Neuropsychiatric Hospital in Kościan, and the Social Welfare Home in Wroniniec. Written consent was obtained from the administrators of the facilities to conduct the study. A STROBE checklist was followed.

### Participants

Research enrolling criteria: nursing degree, occupational activity, working with patients with mental disorders, and consent to research study. Medical personnel without nursing degrees, outside of the labor force, working with other patients, and those without informed consent were excluded from the research. Before starting, participants were informed about the aim of the study. They were also informed about anonymity, voluntariness of their participation in the study, and the possibility of their resignation from it. Head nurses of particular medical units were supervised over the correctness of the questionnaires.

### Data sources/measurement

The research was conducted using three diagnostic survey questionnaires.

*Maslach Burnout Inventory (MBI)* evaluates three elements of occupational burnout: emotional exhaustion, depersonalization, and reduced personal accomplishments. It contains 22 positions divided into three unequal groups where each group applies to a different element of occupational burnout. The subscale of emotional exhaustion contains 9 positions, the subscale of depersonalization has 5 positions, and the subscale of reduced personal accomplishment has 8 positions. The results were calculated for each subscale separately. High scores in the subscales of emotional exhaustion and depersonalization and the low scores in the subscale of reduced personal accomplishment result in a high level of occupational burnout. Each position reads as a sentence about feelings or attitudes and the respondents select as to what level they experience it. Participants use a 7-point rating scale: 0 means never experienced, and 6 means experience every day [12]. The score is calculated separately for each subscale by adding the points in each aspect: emotional exhaustion – high (>27), moderate (17–26), low (0–16); depersonalization – high (>13), moderate (7–12), low (0–6); and

personal accomplishment – high (0–31), moderate (32–38), low (>39) [13,14].

*Center for Epidemiologic Studies Depression Scale (CES-D)*. The total score is calculated by finding the sum of 20 items. In respect to each statement, it describes the mood or behavior of the respondent. To determine the CES-D scores, answers have assigned points 0, 1, 2, or 3 according to positive or negative meaning. For items 1–3, 5–7, 9–11, 13–15, and 17–20, the point meanings are: rarely or never (less than 1 day)=0, a little or some time (1–2 days)=1, occasionally or moderately (3–4 days)=2, most or all the time (5–7 days)=3. Positions 4, 8, 12, and 16 are assessed differently: most or all the time (5–7 days) = 0, occasionally or moderately (3–4 days)=1, rarely or never (less than 1 day)=3. Range of scores for the screening tests:

- less than 15 – doesn't show symptoms of depression;

- 15–21 – mild and moderate depression;

- over 21 – possibility of severe depression.

The possible range of results is from 0 to 60, however, higher results indicate more symptoms [15]. The respondent selects one of the five possible answers regarding the frequency of their appearance [16].

*The self-administered survey* contains 14 questions and consists of three parts. The first part included sociodemographic data. The next part relates to career. The third part included questions about self-assessment of health status, quality of sleep, nutrition, and physical activity. Questions about quality of sleep and nutrition were based on a Likert scale (4-point scale with so-called forced choices).

## Study size

The most recent data, published by the Polish Chamber of Nurses and Midwives (NIPiP), show that, on the 31<sup>st</sup> of December 2022, 236,414 nurses were employed [17]. Unfortunately, there is little current NIPiP or Central Statistical Office data on the number of nurses employed in psychiatric wards. Therefore, we used the number of 236,414 (the number of employed nurses in Poland – NIPiP data) to estimate the number of surveyed samples. With a confidence level of 95%, a margin of error of 5%, and  $p=50\%$ , the minimum study sample was set at 384 subjects. Due to the fact, that only a portion of the nurses work with patients with mental disorders, it can be considered that a number of 106 subjects is a sufficient number of respondents for this survey.

## Statistical methods

The analysis was conducted using the R package, 4.2.2 version. The comparison of quantitative variables in two groups was performed using the Mann-

Whitney test, whereas the comparison of quantitative variables in groups of three or greater was performed using the Kruskal-Wallis test. After finding statistically important differences, the post-hoc analysis was carried out using the Dunn test. Correlations among quantitative variables were analyzed using Spearman's correlation coefficient. A significance level of 0.05 was adopted for the analysis.

## Ethics consideration

Approval of the Bioethics Committee of the Medical Institute of State Higher School in Glogow was obtained (no. 59/2022).

## RESULTS

### Participants

The study was conducted on a group of 106 members of the nursing staff, of which most of them were women (90, 84.91%). The largest group of respondents were people in the age range of 41–50 (38, 35.85%) with secondary education (40, 37.74%). The mean age of respondents was 47.99 (SD=10.56). Most of the participants worked in a shift system (84, 79.25%, Table 1)

Table 1. Characteristics of the study group (N=106)

Variables	n	%
<b>Age [years]</b>		
20–30	8	7.55
31–40	16	15.09
41–50	38	35.85
51–60	33	31.13
61–70	11	10.38
<b>Gender</b>		
Women	90	84.91
Men	16	15.09
<b>Education</b>		
Secondary education	40	37.74
Bachelor degree	39	36.79
Master degree	27	25.47
<b>Specialization in Psychiatric Nursing</b>		
Yes	27	25.47
No	79	74.53
<b>Marital status</b>		
Married	85	80.19
Widow/widower	9	8.49
Others	12	11.32

Table 1 contd.

Variables	n	%
<b>Place of residence</b>		
City	69	65.09
Village	37	34.91
<b>Material status</b>		
Very good	5	4.72
Good	94	88.68
Bad	7	6.60
<b>Work system</b>		
One-shift work system	21	19.81
Shift work system	84	79.25
No data	1	0.94
<b>Work experience [years]</b>		
0-10	17	16.04
11-20	18	16.98
21-30	37	34.91
31-40	29	27.36
41-50	5	4.72

A group of 45 people (42.45%) were being treated for chronic diseases. Most of them did not participate in regular physical activity (59, 55.66%). Most respondents (56, 52.83%) answered 'rather yes' to the question of regular and healthy nutrition. Most people (61, 57.55%) determined their sleep quality at a good level, but nearly 40% claimed that their sleep quality was bad or very bad (Table 2).

Table 3. Depression and occupational burnout

OCCUPATIONAL BURNOUT								
Points	Interpretation			n	%			
<b>Emotional exhaustion</b>								
0-16	Low			33	31.13			
17-26	Moderate			30	28.30			
>26	High			43	40.57			
<b>Depersonalization</b>								
0-6	Low			48	45.28			
7-12	Moderate			28	26.42			
>12	High			30	28.30			
<b>Lack of personal accomplishment</b>								
0-31	High			60	56.60			
32-39	Moderate			24	22.64			
>39	Low			22	20.75			
MBI	N	M	SD	Median	Min	Max	Q1	Q3
Emotional exhaustion	106	24.73	12.71	21	4	54	15.00	31
Depersonalization	106	8.70	7.43	8	0	30	2.62	13
Personal accomplishment	106	27.97	11.83	30	0	48	19.00	37

Table 2. Lifestyle and health factors of the study group (N=106)

Variables	n	%
<b>Treating yourself for chronic diseases</b>		
Yes	45	42.45
No	60	56.60
No data	1	0.94
<b>Regular physical activity</b>		
Yes	47	44.34
No	59	55.66
<b>Regular and healthy diet</b>		
Definitely yes	18	16.98
Rather yes	56	52.83
Rather no	31	29.25
Definitely no	1	0.94
<b>Sleep quality</b>		
Very good	3	2.83
Good	61	57.55
Bad	39	36.79
Very bad	3	2.83

### Depression level and burnout

In 43 out of 106 (40.57%) survey participants, a high level of emotional exhaustion was identified. Depersonalization at a high level was found in 30 subjects (28.30%). Lack of personal accomplishments at a high level was found in 60 (56.60%) people (Table 3).

Table 3 contd.

DEPRESSION							
CES-D - points		Interpretation				n	%
0-15		Mild or absent symptoms of depression				49	46.23
16-23		Moderate depression symptoms				25	23.58
24-60		Deep worsening of depressive symptoms				32	30.19
CES-D [points]							
N	M	SD	Median	Min	Max	Q1	Q3
106	19.24	13.81	17	0	60	7.47	27

Legend: M – mean; SD – standard deviation; Q1 – first quartile; Q3 – third quartile; Min – minimum; Max – maximum; MBI – Maslach Burnout Inventory; CES-D – Center for Epidemiologic Studies Depression Scale.

The level of depression correlates significantly and positively with emotional exhaustion ( $p < 0.001$ ) and depersonalization ( $p < 0.001$ ), so the higher the level of depression, the greater emotional exhaustion and the higher the level of depersonalization. In addition, the level of depression correlates significantly and negatively with professional satisfaction, so the higher the level of depression, the less professional satisfaction ( $r = -0.59$ ,  $p < 0.001$ , Table 4).

### Nursing sleep and quality, as well as professional burnout

Professional satisfaction was significantly greater in a group with very good or good quality of sleep ( $p = 0.001$ ). On the other hand, emotional exhaustion

Table 4. The level of depressiveness and occupational burnout of nursing staff working with patients with mental disorders

MBI	CES-D
	Spearman's correlation coefficient
Emotional exhaustion	$r = 0.554$ , $p < 0.001^*$
Depersonalization	$r = 0.499$ , $p < 0.001^*$
Personal accomplishment	$r = -0.59$ , $p < 0.001^*$

\* Statistically significant relationship ( $p < 0.05$ ).

and depersonalization were significantly stronger in the group with very bad or bad quality of sleep.

Emotional exhaustion and depersonalization were significantly stronger in people who reported that they definitely or rather not had eaten healthily than in people who had significantly eaten healthily.

Table 5. Nutrition and sleep quality of nursing staff and occupational burnout

MBI	Variables	n	M	SD	Me	Min	Max	Q1	Q3	p
<b>Sleep quality</b>										
Emotional exhaustion	Very good, good	64	20.15	9.71	19.00	4	53	13.75	25.25	$p < 0.001^*$
	Bad, very bad	42	31.72	13.64	30.50	9	54	20.50	42.50	
Depersonalization	Very good, good	64	6.82	6.03	5.00	0	29	2.00	10.25	$p = 0.006^*$
	Bad, very bad	42	11.56	8.47	11.12	0	30	3.25	18.00	
Personal accomplishment	Very good, good	64	31.12	10.53	33.50	0	48	25.75	39.25	$p = 0.001^*$
	Bad, very bad	42	23.16	12.20	21.50	0	45	15.00	33.25	
<b>Regular and healthy diet</b>										
Emotional exhaustion	Definitely yes – A	18	19.83	11.24	15.50	5	43	14.00	21.00	$p = 0.020^*$
	Rather yes – B	56	23.55	11.65	24.00	4	54	14.00	30.25	C > A
	Rather no/definitely no – C	32	29.57	14.01	25.50	9	54	19.00	38.09	
Depersonalization	Definitely yes – A	18	6.94	5.84	7.00	0	20	2.25	10.00	$p = 0.006^*$
	Rather yes – B	56	7.21	6.93	5.00	0	30	2.00	11.00	C > A, B
	Rather no/definitely no – C	32	12.28	8.01	12.12	0	29	6.50	18.00	
Personal accomplishment	Definitely yes – A	18	30.96	11.00	33.00	11	48	25.32	39.50	$p = 0.019^*$
	Rather yes – B	56	29.88	11.26	31.50	0	47	20.00	39.00	A, B > C
	Rather no/definitely no – C	32	22.95	12.05	23.93	0	43	12.75	34.25	

Legend: M – mean; Me – median; SD – standard deviation; Q1 – first quartile; Q3 – third quartile; \* statistically significant relationship ( $p < 0.05$ ).

Professional satisfaction was significantly lower in people who had definitely or rather not eaten healthily than in the other groups (Table 5).

### Nutrition style and quality of nursing personnel sleep and depressiveness

The severity of depression was significantly higher in the group with very poor or poor sleep quality ( $p < 0.001$ ). There were no significant relationships between the style of nutrition and the level of depression ( $p = 0.55$ , Table 6).

Table 6. Nutrition style and sleep quality of nursing staff and the depressiveness of the respondents

Variables	n	CES-D [points]							p
		M	SD	Median	Min	Max	Q1	Q3	
<b>Regular and healthy diet</b>									
Definitely yes	18	17.76	13.51	16.33	0	45	7.00	22.50	$p = 0.550$
Rather yes	56	18.32	12.93	17.00	0	53	8.75	23.00	
Rather no/definitely no	32	21.68	15.50	22.53	1	60	7.58	30.28	
<b>Sleep quality</b>									
Very good, good	64	15.04	12.36	12.00	0	48	6.00	21.00	$p < 0.001^*$
Bad, very bad	42	25.64	13.58	24.50	5	60	15.00	34.08	

Legend: M – mean; p – Mann-Whitney test; SD – standard deviation; Q1 – first quartile; Q3 – third quartile; \* statistically significant relationship ( $p < 0.05$ ).

significantly affected the level of occupational burnout. In addition, more than half of our subjects had deep or moderate symptoms of depression, and the higher the level of depression, the higher the level of professional burnout. Poor sleep quality was important in the development of depression.

### Interpretation

High performance in the exhaustion and depersonalization subscales and low performance in the reduced sense of personal accomplishments subscale is evidence of a significant level of professional burnout [12]. Emotionally exhausted nursing staff will experience excessive fatigue and lack of energy, feel depleted on the professional level and do not see the possibility of regeneration of forces, and also feel unable to make contact with people. Depersonalization, on the other hand, manifests itself as a distancing in interpersonal contact cynicism, a withdrawn attitude, and indifference in dealing with people. Personal compliance is a sense of reduced effectiveness of your own work, a decrease in your sense of your own competence, feeling difficulties in meeting the requirements at work, and feeling work as a stressful situation [18]. In the Chinese study by Tang et al., they obtained high burnout rates - 73.69% of the nurses had moderate to severe emotional exhaustion,

## Discussion

### Key results

The purpose of our study was to analyze professional burnout and the severity of depressive symptoms among nurses working with patients with mental disorders. We have shown that most nursing staff working with patients with mental disorders had a high or medium level of emotional exhaustion and a lack of personal accomplishment at a high level. Healthy and regular nutrition and good sleep quality

76.75% had moderate to severe job burnout pertaining to depersonalization, and 98.8% had moderate to severe job burnout pertaining to personal accomplishments [4]. Analyzing our results in a similar way, it can be said that in our study, we obtained slightly lower indicators than Tang, because 68.87% had moderate to severe emotional exhaustion, 54.72% had moderate to severe depersonalization, and 43.39% had low to moderate levels of personal accomplishment. A meta-analysis of research carried out by Łopatkiewicz et al. among psychiatric nurses in selected European countries showed that the level of burnout of respondents in terms of emotional exhaustion and depersonalization is within the range defined as average [19].

In our work, we also analyzed the impact of selected factors on the risk of occupational burnout. According to Jończyk and Sawicka, the reasons for professional burnout in the work of nurses are very individual, nevertheless, research on this problem has identified a number of factors that increase the risk of professional burnout. These include elements related to the employee's person, his/her personality, and way of functioning in the work environment, as well as elements related to the job organization, especially its culture, including a motivating system or dominant management styles [20]. In our study, we focused on factors related to the employee, in particular, we were interested in if and how such modifiable

variables as lifestyle, quality of sleep, and depressiveness affected occupational burnout components.

Just over half of the nursing staff we examined said they tended to eat healthy and regular food and described their sleep as good. Our research showed that emotional exhaustion and depersonalization were significantly stronger in the group with very poor or poor sleep quality. Basinska B. et al. showed that 61% of nurses surveyed had trouble sleeping [21]. Rejek E. et al. also confirm that the work of nurses in psychiatric wards adversely affects the quality of sleep (50% of respondents reported sleep problems) [6]. In our research, people with very good or good sleep quality had a significantly higher level of occupational burnout ( $p=0.001$ ), lower level of emotional exhaustion ( $p<0.001$ ), and depersonalization ( $p=0.006$ ) compared to those with poor sleep quality. About 40% of respondents described their sleep quality as bad or very bad, which affected emotional exhaustion and depersonalization, which were significantly stronger in these people. In addition, we have proved the important relationship between the declared eating style and burnout. People who did not eat healthy had a higher level of emotional exhaustion ( $p=0.02$ ) and depersonalization ( $p=0.006$ ) and a lower level of job satisfaction ( $p=0.019$ ) in comparison to those who ate healthy food. Fitzpatrick & Valentine also confirmed that high-quality sleep and healthy eating habits are associated with a reduced risk of psychological conditions such as stress and burnout among nurses [22]. Unfortunately, nursing staff do not always follow healthy diet guidelines, physical activity, and adequate sleep time despite the fact that due to their education, they have a high level of knowledge in this field [23, 24, 25]. Gieniusz-Wojczyk et al., who conducted a study among Polish nurses, concluded that the majority of nurses lead an unhealthy lifestyle and report moderate to severe levels of stress. In this study, 35% of nurses declared harmful alcohol consumption, 20% smoked cigarettes, and 94% said they could make dietary improvements, which means that their lifestyle deviates from WHO's recommendations [26]. Bartosiewicz & Łuszczki, who conducted a study among 587 Polish nurses, also noted that their health behaviors were only at an average level [27]. Other Polish research also confirmed that most examined nurses had a moderate level of health behaviors [28, 29, 30].

Another aspect we studied was the level of nurses' depressiveness. Depression is a serious mental disorder mainly manifested in a decrease in mood and reduction of energy and activity, which often prevents normal functioning [31]. Psychiatric nurses are subjected to greater psychological pressures and are exposed to severe mental stress because they often meet with violence, assaults, beatings, suicides, escapes, and other difficult situations in their work [32]. One-third of the respondents we examined had

profoundly severe depressive symptoms, and a quarter had moderate depression symptoms. Moreover, depressiveness significantly affected all domains of burnout, i.e., as the level of depression increased, the level of emotional exhaustion and depersonalization significantly increased, and the level of personal accomplishments decreased. The style of nutrition has proved to be irrelevant to the severity of depressiveness, but sleep quality was crucial, i.e., people who declared very good or good sleep quality had a significantly lower level of depressiveness. The research conducted in Ghana showed that 19.6% of psychiatric nurses experienced mild to severe depression [10]. A study from Greece found that depression is highly prevalent among psychiatric nurses [33]. Elsayed et al. revealed that psychiatric nurses had moderate levels of work-related stress and depression [34]. In the study of Tian et al., 10.25% (282/2750) of the nurses had poor sleep quality, burnout, and depressive symptoms, and only 26.95% of these nurses reported mental health service use [35]. Research on Polish nurses during the COVID-19 pandemic showed that 31.88% had depression [36]. In other Polish research conducted by Wojda, 80.48% of psychiatric nurses claimed that working with mentally ill people had adverse effects on their own health. Staff complained of frequent stress (57.89%), sleep problems (42.10%), somatic disorders (26.84%), anxiety (26.31%), and 6.84% had suicidal intentions. In 12.63% of the group, depression was present [37]. Unfortunately, there is a lack of current epidemiological research in Poland on the prevalence of depression among staff working with patients with mental disorders.

### *Generalizability*

An efficient nursing staff can determine the effectiveness of the healthcare system. The high average age of nurses currently employed in Poland (54 years old), shortage of staff [38] due to the fact of the demographic aging of European societies, and high prevalence of mental illness [39] encourage special care for this professional group for public health purposes to be able to maintain those currently employed in the healthcare system as long as possible. Policymakers, facility directors, and nursing leaders (director of nurses and head nurses) should strive to develop a culture to improve the health behavior of personnel and prevent the development of occupational burnout syndrome. In particular, we showed that care for good sleep and healthy eating are important. In practice, this can be done by enforcing appropriate breaks for meals and relaxation during work, enabling access to healthy food in canteens, paying attention to the needs of staff in this regard, regular stress-reducing workouts (yoga), etc.

## Limitations of the study

Eating style and sleep quality were declarative. It is worth conducting another similar study but using standardized tools to evaluate these aspects. The advantage of the study is it was conducted in three different institutions located in two different regions and used validated tools to assess burnout and aggravate depression.

## CONCLUSIONS

Most nursing staff working with patients with mental disorders had high or medium levels of emo-

tional exhaustion and a lack of personal accomplishment at a high level. Healthy and regular nutrition and good sleep quality proved to be key determinants that reduced the level of professional burnout (significant relationship with all burnout domains). This result shows how important these factors are in the prevention of burnout. More than half of the subjects had deep or moderate symptoms of depression. What is more, the higher the level of depression, the higher the level of professional burnout. Poor sleep quality was important for the development of depression. Therefore, care for proper sleep hygiene can be crucial in the prevention of worsening depression and burnout in nursing staff.

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