

PART I. DISEASES AND PROBLEMS DISTINGUISHED BY WHO AND FAO
DZIAŁ I. CHOROBY I PROBLEMY WYRÓŻNIONE PRZEZ WHO I FAO

FACTORS TO HELP RECOGNIZE BURNOUT SYMPTOMS IN HOSPITAL NURSES

CZYNNIKI POMAGAJĄCE ROZPOZNAĆ OBJAWY WYPALENIA ZAWODOWEGO
U PERSONELU PIEŁĘGNIARSKIEGO W SZPITALACH

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Authors' contribution

Wkład autorów:

- A. Study design/planning
zaplanowanie badań
- B. Data collection/entry
zebranie danych
- C. Data analysis/statistics
dane – analiza i statystyki
- D. Data interpretation
interpretacja danych
- E. Preparation of manuscript
przygotowanie artykułu
- F. Literature analysis/search
wyszukiwanie i analiza literatury
- G. Funds collection
zebranie funduszy

Summary

Background. It is important to recognize burnout symptoms among nurses, as it not only affects their wellbeing but can also compromise the quality of care they provide to patients. The aim of this study was to identify potential explanatory factors that help recognize nurse burnout.

Material and methods. Nurses working in hospital settings were invited to take part in an online survey in 2023. Measurements included demographics, physical health (health status, physical activity), emotional states of depression, anxiety, and stress, as well as communication between nurses and physicians. To find explanatory factors for nurse burnout symptoms, hierarchical regression analysis was conducted using SPSS 28.0 statistical software. The significance level was set at p -values ≤ 0.05 .

Results. The data of 233 participants were analyzed, with 27.53 ± 10.21 years of work experience. The majority of participants (93%) were female. The average age was 47.22 ± 8.93 years. There were three significant variables that contributed to burnout symptoms: distress, nurse-physician communication and physical activity. Overall, the final model explained 58% of the variance.

Conclusions. The results emphasize the significance of reducing distress, promoting healthy relationships between nurses and physicians, and encouraging physical activity as ways to lessen burnout among nurses. Since burnout among nurses doesn't dissipate naturally, it necessitates deliberate intervention.

Keywords: nurse-physician communication, physical activity, burnout, distress, nurses

Streszczenie

Wprowadzenie. Rozpoznawanie objawów wypalenia zawodowego wśród personelu pielęgniarskiego jest ważne, ponieważ taki stan nie tylko wpływa na ich samopoczucie, ale może również pogorszyć jakość opieki, którą zapewniają pacjentom. Celem tego badania była identyfikacja potencjalnych czynników, które pomagają rozpoznać wypalenie zawodowe wśród personelu pielęgniarskiego.

Material i metody. Pielęgniarki i pielęgniarze pracujący w warunkach szpitalnych zaproszono do wzięcia udziału w ankiecie internetowej w 2023 roku. Pomiaru obejmowały dane demograficzne, zdrowie fizyczne (stan zdrowia, aktywność fizyczną), stany emocjonalne depresji, lęku i stresu, a także komunikację między personelem pielęgniarskim i lekarzami. W celu stwierdzenia czynników wyjaśniających objawy wypalenia zawodowego pielęgniarek i pielęgniarzy, przeprowadzono hierarchiczną analizę regresji przy użyciu oprogramowania statystycznego SPSS 28.0. Poziom istotności został ustalony na poziomie wartości $p \leq 0,05$.

Wyniki. Przeanalizowano dane 233 uczestników, mających średnio $27,53 \pm 10,21$ lat doświadczenia zawodowego. Większość uczestników (93%) stanowiły kobiety. Średnia wieku wynosiła $47,22 \pm 8,93$ lat. Stwierdzono trzy istotne zmienne, które przyczyniły się do wystąpienia objawów wypalenia zawodowego: zaniepokojenie, komunikacja pielęgniarka-lekarz i aktywność fizyczna. Ogólnie ostateczny model wyjaśnił 58% wariancji.

Wnioski. Wyniki podkreślają znaczenie zmniejszania stresu, promowania zdrowych relacji między personelem pielęgniarskim i lekarzami oraz zachęcania do aktywności fizycznej jako sposobów na zmniejszenie wypalenia zawodowego wśród pielęgniarek i pielęgniarzy. Ponieważ wypalenie zawodowe wśród personelu pielęgniarskiego nie ustępuje w sposób naturalny, wymaga ono celowej interwencji.

Słowa kluczowe: komunikacja pielęgniarka-lekarz, aktywność fizyczna, wypalenie zawodowe, dystres, pielęgniarki

Tables: 2

Figures: 0

References: 35

Submitted: 2023 Jun 21

Accepted: 2023 Aug 17

Lukács A, Simon N. Factors to help recognize burnout symptoms in hospital nurses. Health Prob Civil. 2023; 17(4): 291-298. <https://doi.org/10.5114/hpc.2023.130647>

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Introduction

Burnout is a condition caused by prolonged exposure to work-related stress, leading to a syndrome characterized by emotional, mental, and physical exhaustion [1]. It is a phenomenon that can manifest in various professions [2]. Nursing is a demanding profession that requires individuals to provide compassionate care to patients while dealing with a range of physical, emotional, and psychological stressors. Nurses are highly susceptible to burnout due to the emotionally demanding nature of their work, the high workload, long working hours, and the challenging working conditions [3,4].

Recent studies have shown that burnout is prevalent among nurses and has negative consequences for both the nurse and patient outcomes. Burnout can result in high rates of absenteeism, turnover, and reduced quality of care. Additionally, it can lead to job dissatisfaction, depression, and other mental health issues [5-7].

Few studies have explored the impact of workplace relationships on an individual's mental well-being. Among the factors that can influence the mental health of nurses and indirectly contribute to the occurrence of burnout syndromes, the quality of communication between doctors and nurses stands out as a critical aspect. Some previous studies have touched upon this phenomenon, highlighting the significance of the working relationship between physicians and nurses. An inadequate physician-nurse relationship or a lack of effective communication between them has been found to be associated with nurse burnout. Conversely, fostering a positive communication culture between nurses and physicians has the potential to improve nurses' well-being and job satisfaction [8-11], while also ensuring patient safety and improving patient outcomes [12,13]. There is evidence in the scientific literature supporting the idea that physical health, including health status and physical activity, can help prevent burnout and improve overall well-being [14-16].

Research has consistently shown that nurses are at a high risk of burnout. The most recent systematic review and meta-analysis evaluating nurses from 49 countries found 11.23% prevalence, and this varied by geographical location and specialties [17]. They found a low rate in Europe and the Central Asia region, but a high rate in Sub-Saharan Africa. These findings suggest that burnout is a prevalent issue among nurses worldwide and should still be addressed.

The aim of this study was to explore the possible risk factors which can influence the presence of burnout symptoms in nurses working in hospital settings.

Material and methods

Study design, ethics and participants

A quantitative primer correlation design study was conducted in 2023. Participants were recruited from social networks designed for healthcare workers including nurses. The regional ethic committee approved the study under the number BORS-08/2022. The website editors have given permission to share the questionnaire on the social networking site. Respondents were informed at the beginning of the questionnaire about the purpose and methods of the survey, and that participation was anonymous and voluntary. They gave their consent to participate in the survey based on a yes/no response option at the beginning of the questionnaire. Eligibility criteria were to be older than 18 years, in full-time employment, having at least 2 years of work experience as a nurse, and working in a hospital ward.

Measures

Demographics

Demographic questions included age, gender (male/female/other), marital status (living with parents/single/in a relationship), work experience in years, having children (yes/no).

Physical health

Participants rated their actual health status on a Visual Analogue Scale (VAS). It is a simple and effective way to obtain a self-reported rating of one's perceived health status. The VAS typically consists of a straight line that ranges from one extreme to another, with anchor points at each end representing the extremes of the attribute being measured. In the case of actual health status, the anchors could be "Very Poor Health" at one end (0) and "Excellent Health" at the other end (100) [18,19].

Physical activity was measured with a single item "How many minutes of moderate to vigorous exercise do you do each week when your breathing becomes faster, your heart rate increases, and you sweat a little?" Participants were divided into two groups based on whether they did the required 150 minutes of exercise per week.

Emotional states of depression, anxiety and stress

Depression Anxiety Stress Scale – 21 (DASS-21) is a widely used self-report questionnaire measuring symptoms of depression, anxiety, and stress [20].

It consists of 21 items, with 7 items each for depression, anxiety, and stress. Each item is rated on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time), the higher the summing score indicating the severity of the distress in the past week. The Hungarian version was adapted by Szabó in 2010 [21].

Burnout symptoms

The Mini Oldenburg Burnout Inventory (MOLBI) is a self-report tool for assessing burnout in various settings, such as workplaces or research studies. The inventory consists of 10 items and is rated on a Likert scale, typically ranging from 1 (strongly disagree) to 4 (strongly agree) and covers two dimensions of burnout: exhaustion and disengagement. The total score on the MBI can be calculated by summing the scores across all 10 items (ranging from 0 to 40). Higher scores indicate higher levels of burnout symptoms [22]. The Hungarian adaptation was carried out by Mészáros et al. [23].

Sample calculation and statistical analysis

Data were analyzed using SPSS 28.0 statistical software (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp) at statistical significance level 0.05. Data were presented by frequency, mean and standard deviation. To find explanatory variables of burnout symptoms controlled by gender, marital status, having children and work experience, hierarchical regression analysis was completed in three steps. Multicollinearity was checked with variance inflation factors (VIFs). VIFs were between 1.035 (gender) and 1.539 (work experience). As there was high collinearity between age and work experience, age was removed from the analysis. Normal predicted probability (P-P) plot of the standardized residuals referred to linearity, whereas a rectangularly distributed scatterplot referred to homoscedasticity. There were no outliers as the standardized residuals were between -2.10 and 2.9 [24].

To calculate the sample size for estimating sample size with 0.15 effect size (f^2), 0.95 statistical power level and 10 predictors, 173 participants are needed [25,26].

Results

Participants

A total of 242 questionnaires were completed, of which 5 were deleted due to incomplete answers and 4 for working elsewhere other than in a hospital. The participants represented 15 out of 19 counties. Descriptive statistics of the participants are displayed in Table 1.

Table 1. Descriptive statistics of participants (N=233)

Frequency, mean (standard deviation)	Nurses
Sample size	233
Gender ratio (%)	
males	6.0
females	93.1
others	-
missing data	0.9
Age (years)	47.22 (8.93)
Marital status (%)	
living with parents	2.3
single	17.9
in a relationship	78.9
Having children (%)	81.4
Work experience (years)	27.53 (10.21)
Physical activity \geq 150 min (%)	32

Explanatory variables of burnout symptoms in nurses

A 3-step hierarchical regression analysis revealed the variables entered in the first step had no effect on burnout ($F=1.196$; $p=0.313$) (gender, marital status, having children, work experience). The health status, the emotional states of depression, anxiety and stress and physical activity variables entered in the second step showed significant improvement from the first model ($\Delta R^2=0.48$, $\Delta F=68.98$; $p<0.001$). The last variable (nurse-physician communication) in the third step also contributed significantly to the model ($\Delta R^2=0.56$, $\Delta F=41.34$, $p<0.001$). In the third block all the significant predictors are displayed. Overall, the final model explained 58% of the variance. The three significant contributors were distress ($\beta=0.57$; $p<0.001$), nurse-physician communication ($\beta=-0.30$; $p<0.001$) and physical activity ($\beta=0.01$, $p=0.031$) (Table 2).

Table 2. Hierarchical regression model of nurses' burnout symptoms

Steps	R	R ²	R ² Change	B	SE	β	t
Step 1	0.15	0.02	-	-	-	-	-
Gender	-	-	-	0.948	1.412	0.045	0.671
Marital status	-	-	-	-1.009	0.722	-0.096	-1.397
Having children	-	-	-	0.189	1.056	0.014	0.179
Work experience	-	-	-	-0.039	0.038	-0.079	-1.002
Step 2	0.70	0.50	0.48***	-	-	-	-
Gender	-	-	-	-0.586	1.033	-0.028	-0.568

Steps	R	R ²	R ² Change	B	SE	β	t
Marital status	-	-	-	-0.156	0.530	-0.015	-0.294
Having children	-	-	-	0.612	0.767	0.047	0.798
Work experience	-	-	-	0.032	0.029	0.066	1.117
Health status	-	-	-	-0.016	0.012	-0.067	-1.295
Physical activity	-	-	-	1.124	0.535	0.104	2.100
Distress	-	-	-	0.305	0.025	0.662	12.381
Step 3	0.76	0.58	0.56***	-	-	-	-
Gender	-	-	-	-0.484	0.949	-0.023	-0.510
Marital status	-	-	-	-0.060	0.487	-0.006	-0.124
Having children	-	-	-	0.013	0.711	0.001	0.018
Work experience	-	-	-	0.009	0.027	0.019	0.351
Health status	-	-	-	-0.015	0.011	-0.064	-1.342
Physical activity	-	-	-	1.069	0.492	0.099*	2.173
Distress	-	-	-	0.264	0.024	0.573***	11.246
Nurse – physician communication	-	-	-	-0.722	0.112	-0.300***	-6.430

Notes: Statistical significance: * $p < 0.05$; *** $p < 0.001$.

Discussion

In this study, nurses working in hospital settings were investigated with a survey method. Factors that may play a role in the development of burnout have been investigated. The findings of the present study revealed three factors; namely, higher distress, inadequate nurse-physician relationship and lower physical activity that were significant predictors of the risk of developing burnout among nurses. These findings highlight the multifactorial nature of nurses' burnout.

The strongest association of burnout syndromes showed with higher distress in this study, which is in line with previous research [27-29]. Distress can arise from various sources, such as heavy workload, long working hours, exposure to critical incidents, and lack of social support. These stressors can accumulate over time, leading to increased levels of distress and subsequent burnout. It is plausible that nurses who experience higher levels of distress may struggle to cope with the emotional demands of their work. Therefore, it is imperative for healthcare organizations to prioritize strategies to address and mitigate distress among nurses, such as implementing adequate staffing levels, providing opportunities for debriefing and counselling, and fostering a supportive work environment.

The other significant factor that emerged from the analysis was inadequate nurse-physician communication. This finding is consistent with research that has highlighted the importance of positive interprofessional relationships in healthcare settings [30,31]. Poor nurse-physician relationships can lead to communication breakdowns, conflicts, and increased stress, all of which can contribute to nurses' burnout syndromes. Fostering a collaborative and respectful work environment that promotes effective communication and teamwork between nurses and physicians is crucial in prevention.

Regular physical activity has been demonstrated to have numerous benefits for mental health and well-being, and can be particularly helpful for healthcare workers who may experience high levels of distress and burnout [32,33]. However, in this study, only one third of nurses did regular physical activity. Presumably, nurses who often work long hours and have physically demanding jobs, may face challenges in finding time for regular physical activity. Healthcare organizations should prioritize promoting physical activity among nurses by providing opportunities for exercise, such as on-site fitness facilities or flexible work schedules that allow

for breaks and exercise during shifts. Additionally, interventions that promote healthy lifestyle behaviors, such as exercise, should be included as part of nurse well-being programs to help prevent burnout.

It is important to acknowledge the limitations of the present study. First, the study relied on self-report measures, which are subject to bias and may not capture the full complexity of the factors influencing nurses' burnout. Future research could utilize objective measures or a mixed-methods approach to obtain a more comprehensive understanding of the relationships between distress, physical activity, nurse-physician relationships, and burnout. Second, this study relied on cross-sectional data, which do not support causal inference. Third, physical activity was measured with a single item. When using single-item questions, it's important to consider the limitations of self-reported data and potential biases, as participants may overestimate or underestimate their physical activity levels; however, they are commonly used in research and surveys as a quick and easy way to assess physical activity levels in large populations [34,35].

Conclusions

The findings of this study highlight the importance of reducing distress, fostering positive nurse-physician communication and promoting physical activity in order to mitigate nurses' burnout symptoms. Strategies that focus on them may help improve nurses' well-being, job satisfaction, and ultimately, patient outcomes. As burnout symptoms in nurses do not go away on their own, it requires active intervention. Future research should continue to explore the multifactorial nature of this phenomenon.

Disclosures and acknowledgements

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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