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Article

The Impact of Nurse Work Environment on Job Burnout and Turnover Intention

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Abstract: The work environment of nurses has consistently been the most important factor affecting the emergence of burnout and their choice to resign from their positions. **Objective:** To examine the effect of nurse work environment on job burnout and turnover intention among nurses. **Methods:** A cross-sectional study was conducted during October 2024 in Greece. We used the “Practice Environment Scale-5” to measure nurse work environment. Also, we used the single item burnout measure to measure job burnout, and the single item turnover intention measure to measure turnover intention among our nurses. We created multivariable regression models after adjustment for several demographic and job variables. **Results:** More than half of nurses (56.7%) reported a high level of turnover intention. Mean score on single item burnout measure (7.78) indicated high levels of burnout in our sample. Multivariable linear regression analysis showed that lower levels of staffing and resource adequacy was associated with increased job burnout (adjusted beta = -0.431, 95% CI = -0.683 to -0.180, p-value = 0.001). Similarly, our multivariable logistic regression model found an independent negative effect of staffing and resource adequacy on turnover intention (adjusted OR = 0.594, 95% confidence interval = 0.421 to 0.840, p-value = 0.003). **Conclusion:** Our multivariable analysis showed that worse nurse work environment was associated with higher levels of job burnout and turnover intention. Improvement of nurse work environment is essential to reduce job burnout and turnover intention among nurses.

Keywords: work environment; job burnout; turnover intention; nurses; Greece

1. Introduction

The setting in which nurses deliver their services influences their occupational wellbeing and their choice to leave from their position. Researchers first focused on the working environment of nurses several decades ago, as a significant number of nurses were leaving their positions in hospitals, whereas certain hospitals, known as Magnet hospitals, experienced low resignation rates and successfully recruited new nursing personnel [1]. Interviews with nursing personnel and those in administrative positions documented the specific characteristics that differentiated Magnet hospitals, encompassing administration, professional practice, and professional development. Specifically, these attributes encompassed a leadership approach that engages with and endorses

personnel, sufficient staffing levels, advancement prospects, autonomy, mentorship, professional acknowledgment, respect, opportunities for professional growth, and formal education [2].

Despite nurses acknowledging the significance of the aforementioned characteristics, numerous healthcare organizations have yet to establish a positive working environment for their nursing personnel. Abusive leadership is prevalent in numerous nursing departments, adversely impacting nurses' performance, health, well-being, and the quality of nursing care [3]. Simultaneously, leadership that strengthens, connects, empowers, and inspires, exemplified by engaged leadership, positively impacts nurses' work engagement, innovative behavior and reduces their quiet quitting [4,5]. When the organization and the nursing department supervisor acknowledge nurses' contributions, establish conducive working conditions, and support staff in navigating challenging circumstances, the probability of nurses encountering burnout and indicating a desire to resign diminishes. [6,7].

Adequate nursing staffing has historically been one of the most critical resources that health care organizations have struggled to get. Prior to the onset of the COVID-19 pandemic, numerous healthcare organizations exhibited understaffed nursing departments, where nurses faced significant burnout, with understaffing identified as a contributing factor for their turnover intention [8,9]. During the pandemic, understaffing was identified as a contributing factor to nursing burnout [10]. Also, insufficient staffing adversely impacts the quality and safety of healthcare delivery [11]. Facilitating the ongoing professional development of nurses is essential for maintaining quality and patient safety. This can be accomplished in a conducive work environment marked by sufficient staffing, managerial support, robust enabling leadership, and a favorable workplace culture [12,13].

Among the challenges of occupational well-being faced by nurses, burnout continuously exhibits the greatest prevalence rates, with one in three nurses indicating its occurrence [14]. Nurses are the professional group most impacted by burnout, as they experience the greatest rates of burnout among healthcare professionals [15]. Insufficient staffing in nursing departments, lack of material resources, poor interpersonal interactions, and inadequate support from nursing leadership are key organizational variables contributing to nurse burnout [16–18]. Burnout, along with understaffing, has been identified as a primary factor prompting nurses to terminate their employment in healthcare [19]. Additional organizational outcomes linked to nurse burnout encompass diminished work commitment, productivity, turnover intention and self-efficacy [20–22]. The exhaustion of nurses jeopardizes the safety of healthcare services, as patients in departments staffed by exhausted nurses are more prone to various adverse outcomes, including bleeding, medication errors, infections, patient falls, and hypotension [20,23].

In addition to the demanding working conditions caused by understaffing in nursing departments, nurses are leaving their jobs or resigning from the profession at high rates, which disrupts the efficient operation of nursing departments placing a financial burden on healthcare organizations [24,25]. The global nurse turnover rate fluctuates between 8% and 36.6%, with significant variations across countries and diverse workplaces, often resulting in considerably at high rates, reaching up to 50% [26,27]. The characteristics of the work environment can adversely affect nurses' turnover intention, with burnout serving as a mediating factor between the work environment and the turnover intention [28,29].

The evaluation of nurses' work environment encompasses critical elements that can influence their occupational well-being, and it is currently acknowledged as a significant instrument, supported by numerous research, including those conducted in Greece [18,28–30]. In this context, we performed a study to investigate the effect of nurse work environment on job burnout and turnover intention in a sample of nurses in Greece.

2. Materials and Methods

2.1. Study Design

We performed a cross-sectional study in Greece. We conducted data collection during October 2024. We employed a web-based approach to collect our data. We developed an online version of the study questionnaire using Google forms, and then we disseminated it in nurses groups in Facebook, Instagram, and LinkedIn. Thus, our sample was a convenience sample. Nurses that have been working in clinical settings at least one year could participate in our study.

Our sample size was calculated with G*Power version 3.1.9.2. We applied the following parameters in the calculation: (a) confidence level equals to 95%, (b) margin of error equals to 1%, (c) number of independent variables equal to 10 (five predictors and five confounders), and (d) low effect size ($f^2=0.05$) of nurse work environment on job burnout and turnover intention. We calculated a sample size of 370 nurses.

2.2. Measurements

We measured the following demographic and job variables: sex (females or males), age (continuous variable), work in understaffed ward (no or yes), shift work (no or yes), and work experience (continuous variable).

Nurse work environment was measured with the “Practice Environment Scale-5” (PES-5) [31]. The PES-5 includes five items that measure five dimensions of work environment: (a) nurse participation in hospital affairs, (b) nurse manager ability, leadership, and support, (c) collegial nurse-physician relationships, (d) staffing and resource adequacy, and (e) nursing foundations for quality of care. Answers are on a four-point Likert scale: completely disagree (1), disagree (2), agree (3), completely agree (4). Higher values on five dimensions are indicators of a better nurse work environment. The valid Greek version of the PES-5 was used [32]. We found that Cronbach’s alpha for the PES-5 was 0.611.

We measured job burnout with the single item burnout measure [33]. This measure is a single question; “On a scale from 0 (not at all) to 10 (totally), how tired do you feel because of your job?”. Higher values indicate higher level of job burnout. The single item burnout measure has been translated and validated in Greek language [34].

We used the single item turnover intention measure to measure levels of turnover intention among our nurses [35]. This measure is a single question; “How often have you seriously considered leaving your current job?”. Participants can answer on a scale from 1 (rarely) to 6 (extremely often). Participants with score ≥ 4 belong to group with high level of turnover intention, while participants with score < 4 belong to group with low level of turnover intention.

2.3. Ethical Issues

We applied the principles of the Declaration of Helsinki to conduct our study [36]. Moreover, our study protocol was approved by the Ethics Committee of the Faculty of Nursing, National and Kapodistrian University of Athens (approval number; 01, September 26, 2024). Additionally, we informed nurses about the study design with an information sheet, and then we asked them if they wanted to fill out the study questionnaire.

2.4. Statistical Analysis

We present categorical variables with numbers (percentages). Moreover, we use mean, standard deviation (SD), median, range, and interquartile range to present continuous variables. Distribution of continuous variables was assessed with the Kolmogorov-Smirnov test and Q-Q plots. We considered the five dimensions of the PES-5 as the independent variables. Also, we considered scores on job burnout and turnover intention measures as the dependent variables. PES-5 scores followed normal distribution, and, thus, we used linear regression analysis to eliminate confounders. As we

mentioned above, score on turnover intention measure separates participants into two groups: those with a low high level of turnover intention and those with a high level of turnover intention. In that case, we used logistic regression analysis to identify predictors of turnover intention. First, we performed univariate linear or logistic regression analysis, and then we constructed a final multivariable linear or logistic regression model including all independent variables. Multivariable models were adjusted for demographic and job variables. In case of linear regression analysis, we present unadjusted and adjusted coefficients beta, 95% confidence intervals (CI), and p-values. In case of logistic regression analysis, we present unadjusted and adjusted odds ratios (OR), 95% CI, and p-values. P-values less than 0.05 were considered as statistically significant. We used the IBM SPSS 21.0 (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) for statistical analysis.

3. Results

3.1. Demographics

Our sample included 388 nurses. Most nurses were females (88.4%, n=343), while 11.6% (n=45) were males. Mean age of our sample was 40.9 years (SD; 10.0). The majority of nurses reported that they work on understaffed wards (82.0%, n=318) and shifts (72.7%, n=282). Mean years of work experience was 16.5 years (SD; 14.2).

3.2. Study Scales

We present descriptive statistics for the study scales in Table 1. Regarding nurse work environment, dimensions of “collegial nurse-physician relationships” (mean; 2.49), “nurse manager ability, leadership, and support” (mean; 2.28), and “nursing foundations for quality of care” (mean; 2.15) indicated a better work environment than dimensions of “staffing and resource adequacy” (mean; 1.72) and “nurse participation in hospital affairs” (mean; 1.65).

Mean score on single item burnout measure (7.78) indicated high levels of burnout. Applying the suggested cut-off point for the single item turnover intention measure, more than half of nurses (56.7%, n=220) reported a high level of turnover intention, while 43.3% (n=168) reported a low level of turnover intention.

Table 1. Descriptive statistics for the study scales.

Scales Factors	Mean	Standard deviation	Median	Range	Interquartile range
Practice Environment Scale-5					
Nurse participation in hospital affairs	1.65	0.68	2.00	3.00	1.00
Nursing foundations for quality of care	2.15	0.77	2.00	3.00	1.00
Staffing and resource adequacy	1.72	0.77	2.00	3.00	1.00
Collegial nurse-physician relationships	2.49	0.72	3.00	3.00	1.00
Nurse manager ability, leadership, and support	2.28	0.87	2.00	3.00	1.00
Single item burnout measure	7.78	1.74	8.00	10.00	2.00
Single item turnover intention measure	3.91	1.62	4.00	5.00	2.00

3.3. Impact of Nurse Work Environment on Job Burnout

Linear regression analysis with job burnout as the dependent variable is shown in Table 2. Univariate linear regression analysis showed that nurse participation in hospital affairs, staffing and resource adequacy, and collegial nurse-physician relationships were associated with job burnout. However, multivariable linear regression analysis showed that only staffing and resource adequacy had an independent effect on job burnout. In particular, lower levels of staffing and resource

adequacy was associated with increased job burnout (adjusted beta = -0.431, 95% CI = -0.683 to -0.180, p-value = 0.001).

Table 2. Linear regression analysis with job burnout as the dependent variable.

Independent Variables	Univariate Model			Multivariable Model ^{a,b}		
	Unadjusted Coefficient Beta	95% CI for Beta	P-Value	Adjusted Coefficient Beta	95% CI for Beta	P-Value
Nurse participation in hospital affairs	-0.323	-0.578 to -0.067	0.013	-0.027	-0.282 to 0.228	0.834
Nursing foundations for quality of care	-0.195	-0.420 to 0.031	0.090	-0.026	-0.262 to 0.211	0.832
Staffing and resource adequacy	-0.730	-0.943 to -0.516	<0.001	-0.431	-0.683 to -0.180	0.001
Collegial nurse-physician relationships	-0.376	-0.616 to -0.137	0.002	-0.192	-0.432 to 0.048	0.117
Nurse manager ability, leadership, and support	-0.187	-0.387 to 0.014	0.068	-0.108	-0.312 to 0.097	0.302

CI: confidence interval. ^a Multivariable linear regression model is adjusted for gender, age, understaffed ward, shift work, and work experience. ^b R² for the multivariable model = 19.6%, p-value for ANOVA < 0.001.

3.4. Impact of Nurse Work Environment on Turnover Intention

Table 3 shows results from logistic regression analysis with turnover intention as the dependent variable. Univariate logistic regression analysis identified a statistically significant association between all dimensions of nurse work environment and turnover intention. However, after elimination of confounders we found that only staffing and resource adequacy was associated with turnover intention. In particular, lower levels of staffing and resource adequacy was associated with higher probability of turnover intention (adjusted OR = 0.594, 95% confidence interval = 0.421 to 0.840, p-value = 0.003).

Table 3. Logistic regression analysis with turnover intention as the dependent variable (reference category: low level of turnover intention).

Independent Variables	Univariate Model			Multivariable Model ^{a,b}		
	Unadjusted OR	95% CI for OR	P-Value	Adjusted OR	95% CI for OR	P-Value
Nurse participation in hospital affairs	0.623	0.459 to 0.845	0.002	0.856	0.606 to 1.208	0.375
Nursing foundations for quality of care	0.584	0.444 to 0.768	<0.001	0.738	0.531 to 1.024	0.069
Staffing and resource adequacy	0.532	0.402 to 0.703	<0.001	0.594	0.421 to 0.840	0.003
Collegial nurse-physician relationships	0.649	0.486 to 0.868	0.004	0.797	0.570 to 1.113	0.183
Nurse manager ability, leadership, and support	0.716	0.564 to 0.908	0.006	0.881	0.666 to 1.165	0.374

^a Multivariable logistic regression model is adjusted for gender, age, understaffed ward, shift work, and work experience. ^b R² for the multivariable model = 14.9%.

4. Discussion

This study evaluated the working environment of nurses, their level of burnout, and their turnover intention. The findings highlighted the working environment factors of collegial nurse-physician relationships and nurse manager ability, leadership, and support as the most positive characteristics, while staffing and resource adequacy received the lowest scores. These findings are consistent with those of other studies [23,30,37]. Physicians and nurses are frontline healthcare professionals and provide nearly all of the care that patients receive. Effective communication, cooperation, and teamwork between nurses and physicians are crucial to nurses' occupational well-being, their intention to stay in the profession, their performance, and the quality and safety of the health services provided [38–40]. In addition to the collaborative relationships between nurses and physicians, critical elements of the nursing work environment that affect outcomes for nurses, patients, and the organization are nursing leadership and the availability of both human and material resources [41]. Nursing leaders who empower their personnel, enhance engagement, improve the workplace the environment, and apply leadership styles such as transformational or authentic leadership diminish the probability of staff experiencing burnout [42]. The transformational leadership style and strong working relationships between physicians and nurses are predictor factors for nurses low turnover intention [43,44]. A recent study indicated that diminished collegial relationships between nurses and physicians, along with reduced ability, leadership, and support from nursing supervisors, associated with increased instances of quiet quitting among nurses and decreased work engagement [45]. Although nurses opt for quiet quitting as a form of self-protection against their demanding work environment, which they perceive as unimproving, this choice does not prevent them from leaving their jobs at the first opportunity [46]. Furthermore, as work engagement decreases, nurses' turnover intention increases [47].

The study revealed that participants exhibited significant burnout levels and elevated turnover intention rates. Furthermore, the attributes of their work environment, including reduced personnel levels and insufficient resources, were associated with a heightened likelihood of turnover intention and elevated job burnout. Similar findings are reported in a meta-analysis regarding the nurse-to-patient ratio [48]. Nurses suggest improving staffing levels as a very important intervention to reduce their burnout and improve their well-being [49]. Furthermore, nurses recognize the workload due to understaffing as an important factor that pushes them to quit their jobs [50]. Although nurses acknowledge staffing as a vital component of their work environment, organizational management does not seem to regard these problems with comparable significance. A considerable body of recent research has highlighted understaffing as a determinant influencing nurses' workplace well-being and their propensity to resign [51–53]. As nursing understaffing leads to burnout and turnover intention, burnout in turn increases the intention to leave, and turnover affects staffing levels, we conclude that nurses are trapped in a vicious cycle of an unhealthy work environment where its pathologies are perpetuated.

There is a need to mention the limitations of our study. First, we used a cross-sectional design to conduct our study, and, thus, we cannot establish causal relationships between nurse work environment, job burnout, and turnover intention. Second, we used a convenience sample, and, thus, we cannot generalize our results in the population of Greek nurses. For instance, percentage of males in our study was low. Third, we used self-reported tools that measure nurses' perceptions of nurse work environment, job burnout, and turnover intention. In this context, information bias is probable in our study. Objective indicators of work-related variables, such as nurse staffing levels may resolve this issue in future studies. Fourth, we eliminated several confounders in our multivariable regression analysis. However, several other variables may act as confounders in the relationship between nurse work environment, job burnout, and turnover intention and should be eliminated in future studies.

5. Conclusions

The work environment in which nurses operate predicts their occupational well-being and their purpose to resign from their positions. This study emphasized that staffing and accessible resources are the most significant factors in the work environment affecting burnout levels and the intention to resign. Inadequate staffing is a significant and persistent challenge that healthcare organizations appear to struggle to resolve. Nurses' job well-being is essential for the quality of care delivered and their propensity to resign from their positions. Consequently, maintaining a healthy work environment yields numerous advantages for patients, nurses, and organizational operations, making its enhancement a priority for management.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflicts of interest.

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