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Article

The Impact of Gaslighting on Shaping Patient Safety Culture: A Cross-Sectional Study Among Nurses in Greece

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Abstract

Background/Objectives: Patient safety culture represents a holistic approach to ensuring the safety of patient care. When nurses experience abusive behaviors, patient safety culture is undermined. **Methods:** A cross-sectional study was conducted in Greece, and data were collected via an online survey between October and December 2025. Workplace gaslighting and patient safety culture were measured using the Gaslighting at Work Scale and the Safety Organizing Scale, respectively. Multivariable linear regression analyses were performed using IBM SPSS Statistics 28.0. The level of statistical significance was set at 0.05. **Results:** The sample included 448 nurses. Almost nine out of ten of the participants (87.3%) were women, with an average age of 38.04 years (SD = 10.27). Regarding educational level, 42.2% held a MSc or PhD degree. Respondents reported moderate perceived workplace gaslighting with a mean score of 2.37 (SD = 1.04) on the Gaslighting at Work Scale. For safety culture, the Safety Organizing Scale yielded a mean score of 5.00 (SD = 0.91). In the univariable analysis, workplace gaslighting was significantly and negatively associated with safety culture (beta = -0.195, 95% CI = -0.275 to -0.115, p < .001), indicating that higher levels of workplace gaslighting were related to worse safety culture behaviors. This association was still significant even when potential confounding variables were considered (adjusted beta = -0.223, 95% CI = -0.305 to -0.142, p < 0.001). **Conclusions:** This study highlighted the negative impact of workplace gaslighting on patient safety culture. Healthcare organizational leadership is urged to establish and enforce zero-tolerance policies toward gaslighting behaviors and to foster an environment in which nurses are encouraged to speak up openly and report such behaviors.

Keywords: gaslighting; nurses; patients; safety culture; workplace

1. Introduction

Patient safety constitutes the most critical dimension of the quality of healthcare services and has become a central priority for the leadership of healthcare organizations worldwide. The publication of the Institute of Medicine (US) report “*To Err is Human: Building a Safer Health System*” profoundly shook health systems worldwide, as it revealed that nearly 100,000 patients were dying each year in U.S. hospitals, not due to their underlying disease, but as a result of errors occurring during the delivery of care [1]. At the same time, this report catalyzed a systematic, concerted effort

to reduce errors that lead to adverse patient events. Despite sustained efforts by healthcare organizations' leadership and a reduction in the incidence of adverse events, these events continue to pose a threat to patients' health status and lives, substantially undermining the quality of healthcare services [2].

A comprehensive approach to preventing errors and adverse events, and to ensuring their optimal management after they occur, is the establishment of a safety culture, which can be defined as *"the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management"* [3]. As early as the beginning of the 20th century, the first efforts to systematically record and disclose errors were initiated with the aim of improving performance. In essence, these initiatives represent the earliest steps toward establishing a culture of safety [4]. The structural elements that constitute the patient safety culture in healthcare include: (a) leadership, (b) teamwork, (c) evidence-based practice, (d) communication, (e) learning, (f) a just culture, and (g) patient-centeredness [5]. Leadership is the cornerstone for developing and embedding all the structural elements of a safety culture [6]. It is leadership that strengthens and promotes teamwork and communication, and cultivates an environment of psychological safety, ensuring that everyone in the organization, including patients and families, feels safe and comfortable speaking up to share concerns, suggestions, and ideas for improvement. Through the establishment of a just culture, leadership leverages errors as opportunities for learning by addressing them as system failures, while simultaneously not shrinking from holding individuals accountable for their actions [7–9]. Both the overall patient safety culture and its dimensions have been identified as protective factors for patient safety [10–12].

In contrast to supportive leadership, which fosters a culture of patient safety, gaslighting represents an opposing phenomenon and is often adopted by individuals in positions of responsibility within healthcare settings. Gaslighting constitutes a toxic behavioral pattern that operates as psychological manipulation and an expression of structural power. By its very nature, it conflicts with the conditions required to build and sustain a strong safety culture. In practice, gaslighters may invent or distort information, erode the target's perceptions and memories, cast doubt on emotional or cognitive reactions, and manipulate situational cues in ways that create confusion and a sense of unreality. Collectively, these strategies are designed to weaken individuals' confidence in their own judgment and feelings, promoting self-doubt and gradually undermining self-trust and self-esteem. Importantly, gaslighters may also deny objective facts even when presented with credible, well-documented evidence [13]. This behavioral pattern often stems from a desire to dominate and control, fueled by personal insecurity, an obsessive need to be right, and a strong pursuit of power [14]. Consequently, within this context, the individual experiencing gaslighting (gaslightee) is unable to voice their perspective, even when it is evidence-based, becomes socially isolated, is unable to collaborate effectively, is stigmatized, and works under persistent doubt and fear, conditions that leave no room for the development of a safety culture.

When nurses become targets of gaslighting behaviors, they are more likely to experience burnout, face mental health problems, and report turnover intention [15,16]; they may also remain trapped in their profession not because they wish to, but because they perceive leaving as difficult [17]. Collectively, these experiences constitute a major barrier to any effort to develop a culture of safety.

Studies examining workplace gaslighting are limited, and even more so in relation to nursing personnel. To the best of our knowledge, the present study is the first to examine the impact of gaslighting on patient safety culture.

2. Materials and Methods

2.1. Study Design

A cross-sectional study was implemented in Greece and data was collected through an online survey between October to December 2025. The questionnaire was disseminated through Google Forms and distributed among nurses media groups in Facebook, Instagram and LinkedIn, relying on networks of nursing professional associations and institutions. Thus, we created a convenience sample and participants: (a) should have been clinical nurses working in hospitals, (b) had to be subordinates (but not managers of other nurses) who had worked in the same position for at least one year and (c) should have provided their informed consent. The study was conducted according to the Strengthening the Reporting of Observational studies in Epidemiology (STROBE) guideline [18].

We used G*Power v.3.1.9.2 for sample size determination. In our models, we used one predictor (workplace gaslighting) and six confounders (gender, age, MSc/PhD degree, years of work experience, working in shifts and working at an understaffed department). Accordingly, a total of 436 nurses were calculated as the sample size for an expected effect size of 0.03 between workplace gaslighting and safety culture (outcome), statistical power of 95%, and alpha error of 5%.

2.2. Measurements

Workplace gaslighting among nurses was assessed using the Gaslighting at Work Scale (GWS) [19]. It includes two factors: “loss of self-trust” (five items), and “abuse of power” (six items). Items were scored on a 5-point Likert scale from 1 (never) to 5 (always). Total and subscale scores were calculated as the mean score across all items (1–5), with higher scores indicating more frequent supervisor gaslighting behaviors. The Greek version of the GWS was utilized (Cronbach’s alpha = 0.955) [19,20]. For “loss of self-trust” and “abuse of power,” Cronbach’s alpha values were 0.932 and 0.923, respectively.

To assess safety culture among nurses, we used the 9-item Safety Organizing Scale (SOS) [21]. Answers were recorded on a 7-point Likert scale from one (not at all) to seven (to a very great extent). Total score was derived by calculating the average value of the responses to the 9 items, ranging from 1 to 7. We used the valid Greek version of the SOS [22]. Higher scores are associated with higher levels of organizational safety in the department. In our study, internal consistency for the SOS was very good (Cronbach’s alpha = 0.882).

Demographic and work-related characteristics, i.e., gender (male/female), age (continuous variable), MSc/PhD degree (yes/no), years of work experience (continuous variable), working in shifts (yes/no) and working at an understaffed department (yes/no), were also measured in our study.

2.3. Ethical Issues

This study was conducted in accordance with the guidelines set forth in the Declaration of Helsinki [23]. The Ethics Committee of the Faculty of Nursing at National and Kapodistrian University of Athens approved our study protocol (approval number: 08, 23 September 2025). Data was collected anonymously and on a voluntary basis. Participants were informed of the objectives and design of the study and provided researchers with their consent.

2.4. Statistical Analysis

Continuous variables are summarized as mean, standard deviation (SD), median, and interquartile range (IQR), while categorical variables are reported as numbers and percentages. Continuous variables (normally distributed) were evaluated for distribution type using the Kolmogorov–Smirnov test and Q-Q plots. The predictor was workplace gaslighting, and the outcome was safety culture. Demographic and work-related variables (gender, age, MSc/PhD degree, years of work experience, working in shifts and working at an understaffed department) were treated as confounders.

Association of workplace gaslighting and safety culture was determined by univariable and multivariable linear regression analyses. We initially performed univariable linear regression

analysis and then constructed a final multivariable model. This model was adjusted for potential confounders and measured the independent impact of workplace gaslighting on safety culture. We report unadjusted and adjusted betas, 95% confidence intervals (CIs), and p-values. We also assessed multicollinearity among the independent variables in the final multivariable models using variance inflation factors (VIFs). VIFs greater than 5 indicated multicollinearity among independent variables. We assessed histograms of the residuals to check for multivariable normality. We examined residuals versus predicted values scatterplots to confirm the assumptions of homoscedasticity and linearity [24]. There was no missing data. P-values < 0.05 were considered statistically significant. Statistical analyses were performed using IBM SPSS 28.0 (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY, USA: IBM Corp.).

3. Results

3.1. Demographic Characteristics

Final sample included 448 nurses. The demographic and work-related characteristics of nurses are shown in Table 1. Almost nine out of ten of the participants (87.3%) were women, with an average age of 38.04 years (SD = 10.27). Regarding educational level, 42.2% held a MSc or PhD degree and. The mean duration of work experience was 11.61 years (SD = 9.97). Most participants (76.6%) worked in shifts and a large proportion of nurses (80.8%) reported working at an understaffed department.

Table 1. Demographic characteristics of nurses (n = 448).

Characteristics	N	%
Gender		
Males	57	12.7
Females	391	87.3
Age (years)	38.04 ^a	10.27 ^b
MSc/PhD degree		
No	259	57.8
Yes	189	42.2
Years of work experience	11.61 ^a	9.97 ^b
Working in shifts		
No	105	23.4
Yes	343	76.6
Working in an understaffed department		
No	86	19.2
Yes	362	80.8

^a mean, ^b standard deviation.

3.2. Study Scales

Respondents reported moderate perceived workplace gaslighting with a mean score of 2.37 (SD = 1.04) on the Gaslighting at Work Scale. For safety culture, the Safety Organizing Scale yielded a mean score of 5.00 (SD = 0.91). Table 2 shows descriptive statistics for the study scales.

Table 2. Descriptive statistics for the study scales (n= 448).

Scale	Mean	Standard Deviation	Median	Interquartile Range
Gaslighting at Work Scale	2.37	1.04	2.27	1.91
Loss of self-trust	2.11	1.02	2.00	1.80
Abuse of power	2.59	1.13	2.50	1.83
Safety Organizing Scale	5.00	0.91	5.00	1.00

Table 3 depicts the Pearson correlation coefficients between study scales. Results showed that the Safety Organizing Scale total score was significantly negatively associated with workplace gaslighting scores at the 0.01 level ($r = -0.222$ for the Gaslighting at Work Scale overall total score, $r = -0.168$ for the loss of self-trust score and $r = -0.247$ for the abuse of power score) suggesting that higher perceived workplace gaslighting was associated with lower levels of safety-organizing behaviors.

Table 3. Pearson’s correlation coefficients for the study scales (n=448).

Scale	2	3	4
1. Gaslighting at Work Scale	0.948**	0.971**	-0.222**
2. Loss of self-trust		0.844**	-0.168**
3. Abuse of power			-0.247**
4. Safety Organizing Scale			

** p-value < 0.01.

3.3. Association Between Workplace Gaslighting and Safety Culture

Univariable and multivariable linear regression analyses for workplace gaslighting and safety culture are shown in Table 4. In the univariable analysis, workplace gaslighting was significantly and negatively associated with safety culture ($\beta = -0.195$, 95% CI = -0.275 to -0.115, $p < 0.001$), indicating that higher levels of workplace gaslighting were related to worse safety culture behaviors. This association was still significant even when potential confounding variables were considered (adjusted $\beta = -0.223$, 95% CI = -0.305 to -0.142, $p < 0.001$). The multivariable model explained 9.7% of the variation in safety culture. Supplementary Figure S1 indicated multivariable normality for the multivariable model with safety culture as the dependent variable since the residuals followed a normal distribution. Supplementary Figure S2 indicated homoscedasticity and linearity of the multivariable model, with safety culture as the dependent variable. VIF for the final multivariable model ranged from 1.029 to 1.206, indicating an absence of multicollinearity between independent variables.

Table 4. Linear regression models with safety culture as the dependent variable (n = 448).

Independent variable	Univariate models			Multivariable model ^a		
	Unadjusted coefficient β	95% CI for β	P-value	Adjusted coefficient β	95% CI for β	P-value
Workplace gaslighting	-0.195	-0.275 to -0.115	<0.001	-0.223	-0.305 to -0.142	<0.001

^a Multivariable model is adjusted for age, gender, MSc/PhD degree, years of work experience, working in shifts and working at an understaffed department. R^2 for the multivariable model = 9.7%, p-value for ANOVA < 0.001. CI: Confidence Interval.

4. Discussion

The present study highlighted the detrimental impact of workplace gaslighting on the development of a safety culture among nursing staff. Although this is the first study to examine this specific association, the literature has documented a negative relationship between workplace gaslighting and patient quality of care and safety outcomes [25]. Fostering a robust safety culture requires the promotion of open communication among members of the healthcare team and the strengthening of psychological safety by encouraging the expression of doubts and questions regarding safety issues, even when these may appear to be of minor importance. In the event of an error, staff should not be stigmatized; instead, a systems-based approach should be adopted, focusing on identifying underlying causes rooted in flawed processes and design [26]. Consequently, gaslighting behaviours that marginalize employees through stigmatization, questioning of their credibility, and humiliation undermine their willingness to communicate and collaborate.

Workplace gaslighting may also indirectly affect patient safety. Specifically, nurses who experience workplace gaslighting are more likely to develop burnout and an intention to leave their job [15], which in turn constitute predictive factors that adversely influence the development of a patient safety culture [27,28]. Burnout and the intention to leave effectively drive nurses toward disengagement from their work, such that there is no longer any interest in improving it; instead, they focus primarily on finding an “exit route” in order to secure a more favorable work environment [29]. The turnover intention also affects patient outcomes, increasing the likelihood of adverse events and compromising the quality of care [30,31].

Other dimensions of working life affected by workplace gaslighting include the emergence of employees’ mental health problems, their work disengagement, and their propensity to adopt quiet quitting behaviors [16]. All these conditions are associated with a deterioration in the quality of healthcare and with an impaired capacity to develop a health culture. Specifically, stress, depression, and disengagement constitute inhibitory factors for the development of a safety culture [28,32,33]. Regarding quiet quitting, although the employee does not resign from their position, they provides only the minimum required contribution, refrains from participating in team meetings, and does not voice their ideas, rendering their role largely passive [34]. Such a stance is incompatible with the development of a safety culture, which depends on active engagement as well as effective team communication and collaboration.

Given the substantial repercussions of workplace gaslighting for both healthcare professionals and patients, healthcare organizations’ leadership should implement actions that are preventive to this phenomenon. From a preventive perspective, a key strategy is the establishment and promotion of leadership styles that foster a healthy work environment. In particular, transformational leadership contributes to workplace empowerment, job satisfaction, psychological empowerment, work engagement, and job performance, while simultaneously reducing the frequency of adverse patient outcomes by strengthening patient safety [35,36]. Transformational leaders motivate employees, inspire them, and foster interprofessional collaboration, elements that are essential for improving the quality of health services, and for establishing a culture of safety [37,38]. A similarly beneficial effect on nurses’ work-related behavior is also attributed to engaging leadership. Through inspiring, strengthening, connecting, and empowering behaviors, the engaged leader helps prevent nurses’ withdrawal associated with quiet quitting and fosters work engagement [39], a key prerequisite for a strong patient safety culture [40].

Our study had several limitations. First, the cross-sectional nature of the study prevents inference of causality between the variables under investigation. Moreover, patient safety culture was evaluated solely through self-reported measures, without the use of administrative indicators or data extracted from patient records; consequently, responses may be susceptible to subjective interpretation and reporting bias. Because the analysis relied on a convenience sample of nurses to explore the relationship between workplace gaslighting and patient safety culture, the results cannot be readily generalized to the broader nursing workforce in Greece or to other settings. Future research should employ random, stratified, and more representative sampling strategies to strengthen external validity and further substantiate these findings. Finally, to the best of our knowledge, this is the first study to examine the association between workplace gaslighting and patient safety culture; replication in diverse countries and healthcare contexts is therefore needed to confirm the present results.

5. Conclusions

The present study is the first to investigate the relationship between workplace gaslighting and patient safety culture. Our findings indicated that participating nurses experience workplace gaslighting, which adversely affects the safety culture. Because workplace gaslighting can often be covert and employees may be reluctant to disclose such behaviors, leadership in healthcare organizations should develop mechanisms to identify and bring these behaviors to light. Organizational policies that encourage staff to report abusive behaviors, ensure the anonymity of

reporters, and enforce zero tolerance toward such misconduct should be implemented. Within an increasingly demanding work environment and given the imperative to deliver high-quality and safe care, nurses need supportive leadership free from gaslighting behaviors, which undermines any effort to establish and sustain a robust patient safety culture.

Supplementary Materials: The following supporting information can be downloaded at the website of this paper posted on Preprints.org. Figure S1: Histogram of the residuals with safety culture as the dependent variable; Figure S2: Scatterplot of residuals versus predicted values with safety culture as the dependent variable.

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

Data Availability Statement: Data are available at Figshare at <https://doi.org/10.6084/m9.figshare.31566319>.

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

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