

Original Article

Management of Errors by Nursing Administration in Greek Hospitals

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Abstract

Background: Nursing errors are a frequent occurrence in healthcare, often influenced by the demanding nature of clinical practice, high workload, and systemic factors. Nurses play a pivotal role in patient safety, yet the role of nursing administration in managing errors and implementing corrective actions remains underexplored. **Aim:** This study examined how Greek hospital nursing administrations manage reported nursing errors, using the TERCAP tool for structured data.

Method: A cross-sectional study was conducted with 597 clinical nurses from five tertiary hospitals in Greece (Nov 2020–Nov 2023). Data was gathered using the TERCAP questionnaire (paper/electronic) and analyzed with SPSS 26.0.

Results: Errors were reported by 69.7% of nurses, with 48.5% accepting personal responsibility. Main contributing factors were high workload (82.9%) and staff shortages (74.6%). Administrative responses included no action (44.4%), verbal unit recommendations (20.8%), corrective training (10.4%), and rare disciplinary actions (3.7%). Nurses noted poor orientation, limited training, and weak administrative support.

Conclusion: Nursing administrations in Greek hospitals show limited structured intervention in error management. The findings call for non-punitive protocols, ongoing education, and supportive leadership to foster a safety culture and improve patient outcomes.

Keywords: nursing errors; nursing administration; TERCAP; error management; patient safety; Greece

Introduction

Patient safety remains a fundamental priority in healthcare systems worldwide, with nurses playing a pivotal role due to their continuous and direct involvement in patient care (WHO, 2021). Nursing errors, defined as deviations

from appropriate clinical practices that may cause or risk patient harm, are influenced by a complex interplay of individual, systemic, and organizational factors (Panagioti et al., 2019). The demanding nature of nursing practice, high patient acuity, and rapidly changing clinical environments further

elevate the risk of errors, highlighting the need for systematic approaches to prevention, identification, and management (Arakawa et al., 2011; Barker & Nussbaum, 2011).

Internationally, structured tools such as the Taxonomy of Error, Root Cause Analysis, and Practice-responsibility (TERCAP) have been employed to systematically investigate nursing errors and their contributing factors, enabling targeted interventions to improve patient safety (Benner et al., 2006). While global literature emphasizes the importance of safety culture and error reporting systems, the role of nursing administration in managing errors and fostering a culture of safety within hospitals remains underexplored (Leonard et al., 2004; Evans et al., 2006). Nursing administrations significantly influence error management by shaping policies, facilitating education and training, and promoting a non-punitive environment that encourages error reporting and learning from mistakes (Thomas & Willmann, 2012).

In Greece, research focusing on the management of nursing errors has been limited. Recent studies employing the TERCAP tool in Greek hospital settings have provided valuable insights into the categorization of nursing errors and identified key contributing factors such as staffing shortages, high workloads, and medication-related errors (Pappa et al., 2024a; Pappa et al., 2024b). However, how nursing administrations respond to and manage these errors, including the types of corrective actions, disciplinary measures, and educational interventions employed, has not been adequately studied within the Greek context, despite its importance for patient safety and the development of a culture that supports transparency and continuous improvement (González-González et al., 2018; Mahat et al., 2022).

This study aims to address this gap by examining the practices and decision-making processes of nursing administrations in Greek hospitals regarding nursing error management. By focusing on the administrative handling of errors, this research seeks to contribute to the development of effective frameworks for error management and foster a safety culture that enhances the quality of care while

supporting the professional development of nurses.

Research Question

1. How do nursing administrations in Greek hospitals manage reported nursing errors?

Materials and Methods

Study Design: A quantitative cross-sectional study was implemented to explore and analyze how nursing administrations in Greek hospitals manage nursing errors. This design offered a clear overview of prevailing practices and perceptions across various hospital environments, aiding in the identification of trends and areas in need of improvement. Data collection took place from November 2020 to November 2023, utilizing voluntary and anonymous responses from participants. Surveys were distributed in printed form to the hospital units following approval, while an electronic version was also developed to accommodate COVID-19-related restrictions, ensuring broad and accessible participation.

Participants: The study sample comprised 597 nurses working in five tertiary hospitals throughout Greece, covering a range of departments such as pathology, surgery, intensive care units (ICUs), pediatrics, oncology, and respiratory care units. Participants reflected diverse educational backgrounds, including university degree holders, graduates of technological institutes, and assistant nurses. Convenience sampling was employed to efficiently reach the target population, considering the limitations imposed by the COVID-19 pandemic. A G*Power 3.1 analysis determined that a sample of 590 participants would yield a statistical power of 99%, ensuring the robustness of the study's findings.

Data Collection Tool: Data were gathered using a structured questionnaire consisting of two sections. The first section collected demographic details, including participants' gender, age, marital status, educational background, department of employment, professional experience, and employment status at the time of the reported errors.

The second section employed the **Taxonomy of Error, Root Cause Analysis, and Practice-responsibility (TERCAP) tool**, which had been adapted and validated for use in Greece, to obtain comprehensive

information on nursing errors, the factors contributing to these errors, and, specifically for this study, the management practices and administrative responses following error reports. This tool encompasses items assessing systemic, clinical, and environmental factors, as well as communication issues and subsequent administrative actions, enabling systematic categorization and analysis of the collected data. The Greek version of TERCAP was prepared through double translation and evaluated using a test-retest method to ensure both linguistic and cultural suitability. Informed consent was obtained from all participants, either in written form for physical questionnaires or electronically by selecting "Agree" prior to survey completion.

Statistical Analysis: Data analysis was conducted using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics, the types and frequencies of reported nursing errors, and the corresponding administrative actions. Additionally, the analysis explored the relationship between administrative management practices and contributing factors such as staffing adequacy, workload, and the nature of errors, providing a comprehensive understanding of how nursing administrations manage nursing errors in Greek hospital settings.

Ethical Considerations: The ethics committee of the University of West Attica has provided ethical clearance (Approval no: 52654, July 20th, 2020) as well as of the scientific boards of all participating hospitals. Confidentiality and anonymity were maintained. Informed consent was obtained from participants following the provision of a participant's information sheet.

Results

A total of 597 nurses from five tertiary hospitals in Greece participated in the study. The majority were female (78.1%), with a mean age of 42.8 ± 7.1 years. Most participants were married (61.3%) and employed full-time (96%). Regarding

educational background, 47.6% were university graduates, 44.6% graduates of technological institutes, and 7.9% assistant nurses. Concerning their positions, 84.1% were staff nurses, while 15.9% held managerial roles. Most participants worked in adult hospitals (86.3%), with the remainder in pediatric hospitals (13.7%). Participants represented various departments, including pathology units (25.6%), surgery units (24.1%), ICUs (16.4%), pediatrics (13.7%), oncology (10.7%), and respiratory clinics (9.4%), with a mean professional experience of 17.2 ± 6.5 years (Table 1).

In terms of error reporting, 69.7% of nurses reported having experienced a nursing error, while 48.5% indicated personal involvement in committing the error. The most frequently cited contributing factors were the high workload (82.9%), staff shortages (74.6%), and assignment of responsibilities to inexperienced staff (51.3%) (Table 2).

Regarding types of errors, the majority were medication errors (62.3%), followed by documentation errors (9.9%), patient falls (8.7%), intravenous therapy errors (7.4%), errors in tube feeding (5.7%), errors related to the use of medical devices (4.5%), and other types of errors (1.5%) (Table 3).

In relation to management practices by nursing administrations following error reports, 44.4% of cases resulted in no further administrative action beyond acknowledgment, while 20.8% led to verbal recommendations to the unit. Corrective educational interventions were implemented in 10.4% of cases, while non-disciplinary official notices were issued in 7.6% of cases. Disciplinary actions were rare, occurring in 3.7% of cases, and 1.1% involved referrals to protective services.

In 12% of cases, other forms of administrative action were reported, including informal discussions and monitoring (Table 4). Nurses also reported limited structured feedback and follow-up by nursing administrations, underscoring the need for systematic frameworks to enhance error management and patient safety within hospital settings.

Table 1. Demographic Characteristics of Participants (n = 597)

Characteristic	n (%) / Mean ± SD
Gender	
Female	466 (78.1%)
Male	131 (21.9%)
Age (years)	42.8 ± 7.1
20–30	74 (12.4%)
31–40	162 (27.1%)
41–50	243 (40.7%)
>50	118 (19.8%)
Marital Status	
Single	178 (29.8%)
Married	366 (61.3%)
Divorced/Widowed	53 (8.9%)
Educational Level	
University Graduates	284 (47.6%)
Technological Institute Graduates	266 (44.6%)
Assistant Nurses	47 (7.9%)
Department	
Pathology	153 (25.6%)
Surgery	144 (24.1%)
Intensive Care Unit (ICU)	98 (16.4%)
Pediatrics	82 (13.7%)
Oncology	64 (10.7%)
Respiratory Clinics	56 (9.4%)
Years of Experience (years)	17.2 ± 6.5
<5 years	39 (6.5%)
5–10 years	89 (14.9%)
11–20 years	248 (41.5%)
>20 years	221 (37%)
Employment Status	
Full-time	573 (96%)
Part-time	24 (4%)
Position	
Staff Nurse	502 (84.1%)
Nurse Manager/Head Nurse	95 (15.9%)

Type of Hospital	
Adult Hospital	515 (86.3%)
Pediatric Hospital	82 (13.7%)

Table 2. Contributing Factors to Nursing Errors (n = 597)

Contributing Factor	n (%)
High workload	495 (82.9%)
Staff shortages	446 (74.6%)
Assigning responsibilities to inexperienced staff	306 (51.3%)
Inadequate orientation of new staff	262 (43.9%)
Lack of continuous education	227 (38%)
Communication issues within the healthcare team	218 (36.5%)
Use of complex equipment without sufficient training	149 (25%)
Lack of clear protocols	142 (23.8%)
Fatigue due to shift work	118 (19.8%)
Other factors	31 (5.2%)

Table 3. Types of Nursing Errors Reported (n = 597)

Type of Error	n (%)
Medication Errors	372 (62.3%)
Documentation Errors	59 (9.9%)
Patient Falls	52 (8.7%)
Intravenous Therapy Errors	44 (7.4%)
Errors in Tube Feeding	34 (5.7%)
Errors Related to Medical Devices	27 (4.5%)
Other Errors	9 (1.5%)

Table 4. Nursing Administration Responses Following Error Reports (n = 597)

Administrative Action	n (%)
No administrative action (only acknowledgment)	265 (44.4%)
Verbal recommendations to the unit	124 (20.8%)
Corrective educational interventions	62 (10.4%)
Non-disciplinary official notices	45 (7.6%)
Disciplinary actions	22 (3.7%)
Referral to protective services	7 (1.1%)
Other actions (informal discussions, monitoring)	72 (12%)

Discussion

This study examined how nursing administrations in Greek hospitals manage nursing errors, using the TERCAP tool to systematically capture data on demographics, error types, contributing factors, and administrative responses. The findings provide valuable insights into current error management practices while enabling comparison with recent international evidence.

Demographics and Error Reporting Trends

The participant profile, predominantly female nurses (78.1%) with a mean age of 42.8 years and extensive clinical experience (mean 17.2 years), aligns with workforce demographics reported in Greece and similar European healthcare systems (Pappa et al., 2024b; OECD, 2023). The high proportion of staff nurses (84.1%) and broad departmental representation (Table 1) ensured a comprehensive understanding of frontline practice. The high error reporting rate (69.7%) and personal acknowledgment of error involvement (48.5%) are consistent with recent studies highlighting nurses' willingness to report errors, particularly within supportive reporting cultures (Gleeson et al., 2023; Panagioti et al., 2019).

Types of Errors

The prevalence of medication errors (62.3%), followed by documentation errors (9.9%) and patient falls (8.7%) (Table 3), reflects global findings identifying medication administration as a key risk area in nursing practice (Barker & Nussbaum, 2011; Mahat et al., 2022). A 2023 cross-national study by Patel et al. confirmed that medication errors remain the most frequently reported incidents, often linked to workload pressures, interruptions, and complex medication regimens. Recent work by Wang et al. (2023) in acute care settings further identified that medication errors accounted for over 60% of reported nursing errors, underscoring the need for system-level interventions.

In addition to medication errors, documentation errors and patient falls, though less frequently reported, represent critical areas for administrative attention. Documentation errors can lead to delays in treatment, duplication of medication, and

inadequate patient monitoring, consistent with findings by Adams et al. (2022) who noted that incomplete or incorrect documentation was associated with a 20% increase in adverse events in acute care settings. Similarly, patient falls remain a persistent safety concern, particularly in units with high patient acuity and staff shortages, as reported by Chan et al. (2023) emphasizing the importance of fall prevention protocols and risk assessments integrated into routine nursing care. These findings underscore the multifaceted nature of nursing errors, requiring targeted administrative policies addressing both clinical and systemic factors.

Contributing Factors and System-Level Challenges

The primary contributing factors identified that high workload (82.9%) and staff shortages (74.6%) (Table 4) are consistent with recent studies across European and North American hospitals indicating that inadequate staffing levels and high patient acuity are critical contributors to error incidence (Arakawa et al., 2011; Carayon et al., 2022). The identification of issues such as assigning responsibilities to inexperienced staff (51.3%) and inadequate orientation (43.9%) aligns with findings from Lee et al. (2023), which emphasize the role of structured onboarding and mentorship in reducing errors among newly employed nurses. Additionally, communication failures within healthcare teams (36.5%) were reported, reflecting similar findings in the literature highlighting the role of team dynamics in error prevention (Leonard et al., 2004; Stevens et al., 2023).

The identification of communication failures as a contributing factor aligns with global evidence underscoring the importance of interprofessional collaboration and structured communication tools such as SBAR (Situation-Background-Assessment-Recommendation) in reducing errors (Johnson et al., 2022). Research by Fields et al. (2023) highlighted that units implementing structured handover protocols experienced a 30% reduction in medication and procedural errors, demonstrating the effectiveness of communication interventions. Additionally, the lack of continuous education reported by nurses (38%) resonates with findings by Torres et al. (2023), which indicated that

ongoing competency-based training significantly lowers error rates, particularly among nurses with less than five years of clinical experience. Addressing these factors through systematic education and communication improvement strategies can contribute substantially to enhancing patient safety and reducing error incidence.

Administrative Management Practices

A critical focus of this study was the exploration of nursing administrative responses following error reports. The findings demonstrated that 44.4% of cases led to no administrative action beyond acknowledgment, with 20.8% resulting in verbal recommendations, 10.4% in corrective educational interventions, and only 3.7% leading to disciplinary action (Table 2). This pattern aligns with trends toward reducing punitive approaches in error management, consistent with Just Culture frameworks advocating learning-oriented responses over punishment (Dekker, 2016; Thomas & Willmann, 2012).

Recent international studies emphasize that while error reporting is essential, it must be complemented by structured administrative analysis and feedback mechanisms to achieve meaningful system-level improvements (Gleeson et al., 2023; Stevens et al., 2023). For example, Park and Lee (2022) demonstrated that transformational nursing leadership styles correlate with higher error reporting rates and more effective post-reporting interventions, while a multi-center study by Clark et al. (2023) found that organizations with structured error review committees and feedback systems significantly reduced the recurrence of similar incidents.

Recent studies emphasize that the presence of structured administrative processes and visible leadership engagement are critical in translating error reports into system-level improvements. For instance, a 2023 study by Miller et al. demonstrated that hospitals with dedicated nursing error review committees and structured feedback sessions saw a 25% reduction in repeated medication errors within one year, highlighting the value of systematic follow-up and learning cycles. Similarly, Navarro et al., (2022) found that implementing multidisciplinary morbidity

and mortality reviews, including nursing leadership, enhanced the quality of organizational learning from errors, reduced fear of reporting, and encouraged frontline staff participation in safety initiatives. These findings align with our study's observation that limited structured follow-up in Greek hospitals may hinder the translation of error reporting into actionable improvements, underscoring the need for nursing administrations to adopt structured learning and improvement frameworks. Moreover, incorporating non-punitive debriefings and feedback sessions post-incident can reinforce learning while preserving psychological safety among nursing staff, as highlighted by Santos et al., (2023). Establishing these practices may help bridge the gap between error reporting and sustained safety culture improvements within Greek healthcare settings.

Conclusion and Recommendations: This study provides empirical evidence on how nursing administrations in Greek hospitals manage nursing errors, highlighting a high rate of error reporting by nurses but limited structured follow-up by administrations. Common errors include medication errors, documentation mistakes, and patient falls, primarily driven by high workload, staff shortages, and communication failures.

Despite nurses' readiness to report errors, the lack of systematic frameworks, structured feedback, and ongoing education hinders meaningful improvement. To build a safety culture and promote organizational learning, nursing administrations should develop structured, non-punitive error management protocols that incorporate feedback systems and continuous, competency-based training.

Aligning these efforts with international safety standards and Just Culture principles can transform reporting into a platform for systemic improvement, enhancing patient safety, supporting clinical decision-making, and advancing healthcare quality. Future research should focus on evaluating the effectiveness of such interventions in Greek hospitals to guide policy and leadership for sustainable safety outcomes. Leveraging error reporting as a learning tool, not a punitive one, is in line with WHO's patient safety goals and

supports professional development and system resilience.

Study Limitations: This study presents several limitations that should be acknowledged when interpreting its findings. Firstly, the cross-sectional design captures a snapshot in time and does not allow for causal inferences regarding the relationship between contributing factors and administrative responses to nursing errors. Secondly, the use of self-reported data may introduce recall bias or social desirability bias, as participants may have underreported or overreported errors or administrative actions based on personal perceptions or fear of judgment. Moreover, the study relied on convenience sampling across five tertiary hospitals in Greece, which may limit the generalizability of the findings to other healthcare settings, including rural or non-tertiary institutions. The impact of COVID-19 on healthcare delivery during part of the study period may have also influenced both error frequency and administrative behavior, potentially skewing results. Finally, while the TERCAP tool enabled structured data collection, its application in a Greek cultural and organizational context—despite prior validation—may still face limitations in capturing the full complexity of local administrative practices and informal mechanisms of error management.

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