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Evaluation and Comparison of Occupational Stress and Cognitive Workload of Staff Nurses in the Inpatient Department between Level 3 Public and Private Hospitals

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Abstract

Occupational stress and cognitive overload are persistent challenges for nurses, particularly within ward rooms of Level 3 hospitals in the Philippines, where they are linked to compromised patient safety and nurse burnout. This study assessed and compared these factors among staff nurses in the inpatient departments (IPD) of Level 3 public and private hospitals in the National Capital Region. Using a quantitative, subject-comparative research design, data were gathered from 134 registered nurses through the nine latent domains of the Revised Nursing Stress Scale (RNSS), which was modified to include a tenth domain: compensation and benefits, due to its relevance in local literature. Descriptive statistics identified "Workload" as the primary stressor for nurses in both hospital types, followed by "Patients and Their Families" and "Death and Dying of Patients". The Mann-Whitney U Test revealed significant differences ($p < 0.05$) between the two sectors in six domains: workload, conflict with providers, problems with peers, problems with supervisors, patients and their families, and discrimination. Notably, private hospital nurses reported higher mean ranks for stress in five of the six significant domains, including workload and interprofessional conflicts. Conversely, no significant differences were found regarding compensation and benefits, inadequate preparation, uncertainty concerning treatment, or death and dying. These results highlight how organizational structures and management styles significantly influence nursing stress. The study recommends that hospitals implement targeted, evidence-based interventions—such as workload management strategies, resilience training, and structured communication programs—to optimize nurse well-being and healthcare delivery.

Keywords
Occupational stress, cognitive overload, staff nurses, public level 3 hospitals, private level 3 hospitals

1. Introduction

The healthcare industry plays a critical role in ensuring the well-being of individuals, with nurses serving as frontline providers of patient care. However, the increasing high job demands, staffing, and resource shortages contribute to occupational stress and cognitive overload, which can impact nurses' decision-making and effectiveness in patient care, with studies attributing up to 82% of medication errors to fatigue and cognitive strain (Saha et al. 2020; Bell et al. 2023). In the Philippines, this crisis is worsened by the current landscape of the country's healthcare system, where most nurses deal with low salaries and insufficient benefits while working long hour shifts (Alibudbud 2022; Cordero 2023). These conditions drive many professionals to seek better opportunities abroad.

The inpatient department (IPD) in level 3 hospitals represents one of the most cognitively demanding environments due to high patient acuity and the need for constant, time-sensitive interventions while frequently processing large amounts of information and coordinating with other healthcare professionals, unlike in outpatient settings (Gupta 2020; Adriani et al. 2022). While both public and private Level 3 institutions face these pressures, they operate under distinct organizational stressors. Public hospitals grapple with overcrowding and severe resource limitations, whereas private institutions often face higher administrative pressures and performance expectations (Monera et al. 2024; Alumran et al. 2020).

Despite existing research on nurse workload and burnout, limited studies specifically compare the cognitive workload between public and private hospital nurses. Moreover, post-pandemic research has primarily addressed challenges related to COVID-19, leaving a gap in understanding cognitive workload in most recent normal hospital operations.

With the knowledge stated above, understanding the cognitive workload of nurses in level 3 private and public hospitals is essential for improving workplace conditions, enhancing patient care, and reducing burnout among healthcare workers. This study seeks to assess and compare the cognitive workload and occupational stress of the nurses, as well as differences in workplace conditions, resources, and organizational support. By identifying key factors that contribute to cognitive strain, this study aims to provide evidence-based insights that will help hospital administrators and policymakers develop targeted interventions to optimize nursing performance, promote well-being, and ensure high-quality healthcare delivery.

1.1 Objectives

In order to attain greater efficiency and effectiveness of nurses in providing inpatient care in hospitals in the Philippines, the study aims to (1) examine and compare the levels of occupational stress and cognitive overload experienced by nurses in the IPD of public and private level 3 hospitals in the Philippines, (2) identify the key factors contributing to the occupational stress and cognitive overload of nurses, and (3) provide evidence-based insights to help develop targeted interventions for improving nurses' well-being and workplace efficiency.

2. Literature Review

2.1. Current State of Nurses in the Philippines

Nurses constitute the backbone of the Philippine healthcare system, delivering essential services across autonomous and collaborative care settings. However, according to Hartigan-Go et al. (2024), the quality of care is increasingly compromised by a systemic nursing crisis driven by a "trilemma" of workforce challenges: the lack of a unified national nursing database, ambiguities in employment pathways and compensation, and persistent policy implementation gaps.

The Philippines faces a critical nursing shortage, with a deficit of approximately 127,000 professionals—a figure projected to reach 250,000 by 2030 (Lalu 2023). This shortage manifests in extreme nurse-to-patient ratios, often reaching 1:20 in Level 3 public hospitals, far exceeding the Department of Health's 1:12 standard (Tamayo et al. 2022). Consequently, nurses endure grueling 12- to 16-hour shifts, frequently without additional compensation, leading to severe cognitive overload and occupational stress (Cordero, 2023).

Despite being a leading global exporter of nursing professionals, the domestic healthcare system remains understaffed as many nurses choose migration or career shifts to escape overwhelming job demands, inadequate compensation, and a lack of job security (Alibudbud 2023). As a result, those who remain in the Philippine healthcare system are burdened with even heavier workloads, which accelerates the burnout cycle and contributes to the overall decline in the quality, efficiency, and safety of patient care in the country.

2.2. Salary amongst Nurses in Public and Private Level 3 Hospitals in the Philippines

Salary is a critical driver of well-being for Filipino nurses, yet a sharp disparity exists between sectors. Under the Salary Standardization Law (RA 11466), entry-level public nurses earn approximately Php 36,619, though many on short-term contracts receive only Php 22,000 without benefits (Test Pinoy 2025; Alibudbud 2023). Private sector wages are significantly lower, sometimes falling to Php 8,000—far below the Php 31,770 estimated for basic living in Manila.

Research highlights a complex relationship between income and occupational strain. While low-wage earners (Php 10,000 to 20,000) suffer from financial insecurity, higher-paid nurses report significant strain from increased accountability and job demands (Dantis et al. 2024; Balinbin et al. 2020). Thus, while higher pay is a necessary motivator, they do not inherently mitigate the cognitive overload caused by extreme occupational stress.

2.3. Cognitive Workload and Occupational Stress of Nurses

Cognitive workload represents the mental effort required to process information within an individual's working memory. Meanwhile, cognitive overload occurs when these processing demands exceed an individual's mental capacity, serving as a primary precursor to burnout if left unaddressed (Cezar and Maçada 2023; Akca & Küçükoğlu 2020). In clinical settings, this is often triggered by overcrowded wards, workforce shortages, complex medical challenges, and poor communication workflows. In the Philippines, extreme work demands—compounded by low wages and job insecurity—significantly contribute to high levels of cognitive overload. Collins (2020) indicated that 77% of clinicians recognize the critical impact of cognitive overload on healthcare performance, as it directly diminishes nurse performance and depletes emotional resources.

On the other hand, occupational stress is defined as harmful physical and emotional responses that arise when job requirements do not match a worker's capabilities and resources (National Institute of Occupational Safety and Health 2024). Beyond workload, major stressors include patient mortality, interpersonal conflict, and external pressures (Gray-Toft and Anderson 1981; Pavek et al 2024).

2.4. Public vs. Private Hospitals in the Philippines

Public hospitals are government-owned and funded institutions essential for providing free healthcare to marginalized and low-income communities (PhilHealth 2022). These facilities are among the busiest in the country, with the largest hospital in the country alone serving approximately 600,000 patients annually (Monera et al. 2024; Tamayo et al. 2024). Operating under significant budgetary constraints, public hospitals frequently deal with outdated infrastructure and shortages of supplies. These limitations, combined with high patient volumes, result in chronic overcrowding and understaffing (Adolfo 2020). For nurses, these constraints translate into suboptimal employment conditions, including short-term contracts, reduced salaries, and minimal benefits. Such environments force staff to manage heavy workloads in understaffed units, leading to heightened occupational stress and cognitive overload.

In contrast, private healthcare institutions play a vital role in the Philippine healthcare system, accounting for 856 of the country's 1,311 hospitals as of 2024 (DOH 2024). These facilities are owned by for-profit or non-profit entities and are primarily financed through patient payments, insurance, and government programs (PhilHealth 2022). While they often offer superior technology and better facilities, they are the more expensive option for the general population. Nurses in these settings may exhibit positive work engagement due to ideal environments, but they remain susceptible to occupational stress driven by administrative pressure, performance expectations, and workplace hierarchies (Alumran et al. 2020). Currently, the sector faces a critical 50% nursing staff shortage as professionals seek better salary opportunities elsewhere (Ombay 2023). Despite perceptions of better pay, entry-level private sector nurses earn between Php 8,000 and Php 13,500 monthly, significantly lower than their public sector counterparts (GMA Integrated News 2023).

2.5. Research Gaps

Despite extensive research, a significant gap remains in evaluating the specific cognitive workload and occupational stress of nurses in the Philippines, as most existing literature focuses on broader issues like physical workload and general burnout. There is also a scarcity of comparative studies between public and private hospital settings, which is a critical oversight given the differing work environments and resource allocations between these institutions.

Furthermore, post-pandemic research has predominantly centered on COVID-19-specific challenges, leaving the stressors of normal hospital operations understudied.

To address these gaps and provide a more comprehensive assessment, this study utilizes the Revised Nursing Stress Scale (RNSS), a tool currently limited in local research, localized to include compensation and benefits as a relevant independent variable. By specifically targeting staff nurses in Inpatient Departments (IPDs) of Level 3 hospitals, the research focuses on a high-demand environment often excluded from broader studies. Ultimately, these findings will provide the evidence-based foundation necessary to develop SMART interventions for nurse well-being in the Philippines, where established support systems remain limited.

3. Methods

The research employed a quantitative, subject-comparative design to evaluate the levels of occupational stress and cognitive workload among the participants. This quantitative approach utilized structured instruments to generate numerical data for objective hypothesis validation, while the comparative component facilitated an analysis of stressors across different hospital sectors. The independent variables (IVs), shown in Table 1, comprised ten distinct domains, including the nine latent dimensions of the Revised Nursing Stress Scale (RNSS) and an added domain for compensation and benefits, each representing a factor hypothesized to influence the nurses' overall experience of occupational strain.

Table 1. Independent Variables (IV)

Independent Variables	Definition of Independent Variables and Description of Relationship
Death and Dying of Patients	According to the study by Pavek et al. (2024), death and dying of patients, as repeated exposure to patient loss or suffering, can severely affect a nurse's emotional capacity.
Conflict with Providers	Nurses experience occupational stress from limited information and unclear communication with providers, heightened by the high patient volume dealt by hospitals per day (Werke and Weret 2023; Pavek et al. 2024).
Inadequate Preparation	Hartigan-Go et al. (2024) describe that understaffing, driven in part by the absence of a centralized national nursing database, limits effective workforce planning, rising burnout caused by unmanaged occupational stress and cognitive overload.
Problems with Peers	Nurses often face interpersonal issues like lack of support and unresolved conflicts within the nurse unit. These communication barriers contribute to feelings of being devalued and dissatisfaction in the workplace (Garcia and Marziale 2021; Pavek et al. 2024).
Problems with Supervisors	The study by Valdez et al. (2024) shows the significance of trust in the work environment, emphasizing its role in establishing strong connections and boosting job satisfaction among Filipino nurses.
Workload	Overcrowded wards lead to high-demand workloads, which increases the mental strain and stress of nurses (Yuan et al. 2023). Cognitive overload is often triggered by different information being processed at one time in their work environment.
Uncertainty Concerning Treatment	According to Anilado and San Jose (2025), experiencing difficulty navigating situations, hesitation in executing care plans, anxiety over potential errors, and pressure of being responsible for a person's life can impose additional cognitive demands on nurses.

Patients and their Families	According to Townsley et al. (2023), unreasonable demands from the patients' families are commonly experienced by nurses, which contributes to an emotionally draining work environment.
Discrimination	Health workers experience a lot of forms of violence at the workplace. When these incidents continue over time, they can lead to burnout and reduced job satisfaction, which ultimately results in degraded quality of care (Townsley et al., 2023).
Compensation and Benefits	The study of Alibudbud (2023) stated that low salaries and high cost of living in the country can lead to burnout and frustration among nurses, which can lead to nurses being unmotivated.

3.1. Subjects and Sampling Plan

One hundred thirty-four (134) registered staff nurses employed in level 3 public or private hospitals in the National Capital Region participated in the study. The sample was equally distributed, with 67 respondents representing each hospital sector. To maintain a consistent environmental scope, the research focused exclusively on staff nurses aged 25 to 60 years old with a minimum of two years of experience, assigned in ward rooms in the Inpatient Department (IPD), while specifically excluding those in specialized areas such as intensive care units (ICUs).

The recommended sample size of 134 was determined through a prior power analysis using G*Power 3.1.9.7, with a medium effect size ($d = 0.5$), $\alpha = 0.05$, and power $(1 - \beta) = 0.80$, to ensure sufficient statistical sensitivity for the Mann-Whitney U Test.

4. Data Collection

A convenience sampling technique was employed in the study, integrated with snowball sampling methods, to establish a diverse and accessible respondent pool across various healthcare institutions and work shifts. To accommodate the demanding schedules of healthcare professionals, a dual-mode distribution strategy was implemented, utilizing both face-to-face interactions and online platforms to administer the structured 72-item survey. All procedures were conducted in strict accordance with the Data Privacy Act of 2012, ensuring voluntary participation and the highest level of respondent anonymity.

4.1. Data Gathering Procedure

The data was gathered through a 72-item survey tool divided in ten (10) latent domains based on the Revised Nursing Stress Scale (RNSS) of Pavek et al. (2020), which was modified to include an additional domain for compensation and benefits. Answers were measured using a 4-point Likert scale, rating lists 1 - Never, 2 - Occasionally, 3 - Frequently, and 4 - Very Frequently. Additionally, the analysis was simplified to Low (1-2) and High (3-4).

4.2. Data Analysis and Software

Data were analyzed using descriptive and inferential statistics. Descriptive statistics, specifically frequency distributions and weighted means, were employed to identify and rank the primary latent domains of stressors, regardless of hospital type.

For the comparative analysis, Mann-Whitney U Test, also known as the Wilcoxon Rank-Sum Test, was utilized as the primary statistical tool to evaluate significant differences in occupational stress and cognitive workload between the public and private hospital sectors. This nonparametric test was selected because it does not assume a normal distribution, making it ideal for analyzing the ordinal data obtained from the Likert-scale responses. A significance level of $p < 0.05$ was applied to determine the validity of the research hypotheses.

To facilitate the data analysis and ensure compliance with the test's assumptions, the researchers employed IBM Statistical Package for the Social Sciences (SPSS) and Microsoft Excel.

The final and modified model, equivalent to the Conceptual Framework, is presented in Figure 1.

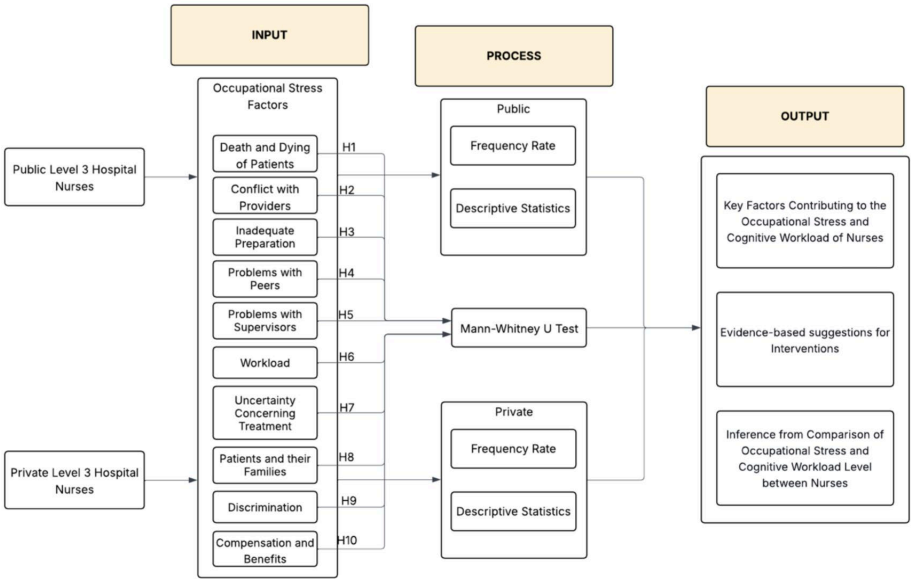

Figure 1. Conceptual Framework

5. Results and Discussion

5.1. Demographic Data

A total of 139 respondents (N = 139) consented to participate in the study; however, five (5) were excluded due to ineligibility, resulting in a final sample of 134 registered IPD nurses (n = 134) working in Level 3 hospitals in the National Capital Region, Philippines. Table 2 presents the demographic and occupational characteristics of the 139 registered nurses who participated in the study from both public and private hospitals.

Table 2. Demographic Data of Respondents (N = 139)

Variable	Frequency (*f*)	Percentage		Variable	Frequency (*f*)	Percentage
Gender				*Years of Experience (in years)*		
Female	106	76.26		> 2	2	1.44
Male	33	23.74		2 – 5	75	53.96
Age (in years)				6 – 0+	62	44.60
Below 25	5	3.6		Assigned IPD Unit		
25 - 29	50	35.97		General Ward	12	8.63
30 – 39	50	35.97		Internal Medicine	34	24.46
40 – 49	21	15.11		Pediatrics	32	23.02
50 – 60	13	9.35		Gertiatrics	2	1.44
Civil Status				Surgical	23	16.55
Single	93	66.91		Transplant	1	13.67
Married	42	30.22		OB-GYN	19	2.88
Widowed	4	2.87		Urology	4	2.88
Place of Residence				Orthopaedics	4	0.72
Outside NCR	13	9.35		Oncoly	1	2.16
Caloocan	4	2.87		Hemodialysis	3	1.44
Las Piñas	3	2.16		Infection Control	2	0.72
Makati	1	0.72		TB DOTS	1	1.44
Mandaluyong	32	23.02		*Hours of Working Shift (in hours)*		
Manila	22	15.83		8	78	56.12
Marikina	4	2.87		12	39	28.06
Parañaque	1	0.72		16	16	11.51

	Pasig	10	7.19			24	6	4.32
	Quezon City	47	33.81		*Shift Type*			
	San Juan	1	0.72			Day shift	81	57.55
	Valenzuela	1	0.72			PM / Evening Shift	22	15.83
Place of Work						Night Shift	19	13.67
	Mandaluyong	40	28.78			Combination	21	12.95
	Manila	31	22.30					
	Pasig	5	3.60					
	Quezon City	63	45.32					

Table 3 presents the respondents' compensation and wellness program characteristics, with responses separated by public and private hospitals to highlight potential differences in salary structures and available wellness initiatives between the two sectors.

Basic monthly salaries varied across both sectors. Public hospital nurses most commonly reported salaries between ₱35,000 - ₱39,999 and ₱40,000–₱44,999, while private hospital nurses most frequently reported salaries between ₱25,000 - ₱29,999. Regarding awareness of hospital stress management programs, a majority of respondents in both public (42) and private hospitals (48) indicated that they were aware of such initiatives. Fewer respondents reported unawareness or uncertainty about these programs. Hospital offerings varied, with 53 respondents claiming that there are counseling services offered in the hospital. Other programs included stress management seminars, mindfulness or wellness activities, and peer support groups, while 23 public hospital respondents and 10 private hospital respondents indicated no wellness programs were available.

Table 3. Respondents' compensation and wellness program characteristics (N = 139)

Variable		Public Hospital	Private Hospital	Grand Total	Percentage
Basic Monthly Salary					
	15,000 - 19,999		3	3	2.16
	20,000 - 24,999		13	13	9.35
	25,000 - 29,999		32	32	23.02
	30,000 - 34,999	3	13	16	11.51
	35,000 - 39,999	26	8	34	24.46
	40,000 - 44,999	31	1	32	23.02
	45,000 - 49,999	8		8	5.76
	50,000 - 54,999		1	1	0.72
Awareness in Hospital Stress Management Programs					
	Yes	42	48	90	64.75
	No	20	8	28	20.14
	I don't know	5	11	16	11.51
Hospital Offerings of Wellness Programs					
	Counseling services	15	38	53	38.13
	Stress management seminars/workshops	30	40	70	50.36
	Mindfulness or wellness activities (e.g., yoga, meditation)	21	13	34	24.46
	Peer support groups	2	21	23	16.55
	None	23	10	33	23.74

5.2 Numerical Results

Table 4 presents the summary of mean scores for the ten domains of occupational stress among registered nurses from both public and private hospitals, based on the nine latent domains of the Revised Nursing Stress Scale (RNSS) and one additional domain developed by the researchers.

Table 4. Descriptive Statistics of Occupational Stress and Cognitive Workload by Domain

Occupational Stressors	General (μ)	SE	Public Hospital ($\bar{x}$)	Private Hospital ($\bar{x}$)
Domain 1: Death and dying of patients	2.3047	0.677	2.3457	2.3047
Domain 2: Conflict with providers (e.g., doctors)	2.2389	0.643	2.3360	2.2389
Domain 3: Inadequate preparation	2.1138	0.683	2.1680	2.1138
Domain 4: Problems with peers (e.g., fellow ward nurses)	1.8489	0.665	1.9850	1.8489
Domain 5: Problems with supervisors (e.g., head nurses)	1.8806	0.758	2.0045	1.8806
Domain 6: Workload	2.3387	0.747	2.4362	2.3387
Domain 7: Uncertainty concerning treatment	2.1418	0.668	2.1642	2.1418
Domain 8: Patients and their families	2.3298	0.814	2.4327	2.3298
Domain 9: Discrimination	1.4671	0.622	1.3254	1.4671
Domain 10: Compensation and benefits	2.2475	0.778	2.2812	2.2138

Descriptive analysis indicates that staff nurses generally experience a moderate level of occupational stress across all measured domains. *Workload* emerged as the primary stressor (μ = 2.3387) which were attributed to understaffing, excessive non-nursing tasks, and unreasonable job demands that diminish overall well-being. This was followed by *Patients and Their Families* (μ = 2.3298) that reflects the emotional exhaustion of managing unreasonable demands while maintaining professional boundaries. Third highest stress domain was the *Death and Dying of Patients* (μ = 2.3047) as recurrent patient loss can weaken resilience and lead to compassion fatigue. Meanwhile, *Discrimination* was identified as the least significant source of strain (μ = 1.4671). Additionally, compensation and benefits moderately contribute to stress (μ = 2.2475), with inadequate salaries and delayed incentives increasing the risk of burnout. While inadequate preparation and interactions with supervisors or peers contribute to the mental workload, they were reported as relatively lower sources of stress in this study. Ultimately, these findings underscore how workload and emotional demands are the most critical factors influencing the occupational stress of nurses in Level 3 hospitals.

Table 5 presents a comparison of occupational stress and cognitive workload levels across ten domains between nurses from public and private hospitals, using the Mann–Whitney U-test. The table includes the U-statistics, which provide the test measure, along with p-values and corresponding interpretations to determine whether significant differences exist between the two groups. In addition, the mean ranks of public and private hospital nurses are presented to indicate which hospital type reported higher levels of occupational stress within each domain.

Table 5. Mann Whitney U-Test Comparison of Occupational Stressors and Cognitive Workload among Public Hospital and Private Hospital Nurses

Occupational Stressors	U	P-value	Interpretation	Mean Rank (Public)	Mean Rank (Private)
Domain 1: Death and dying of patients	2586.00	0.1260	Fail to reject null	62.40	72.60
Domain 2: Conflict with providers (e.g., doctors)	2943.00	0.0010	Reject null	57.07	77.93
Domain 3: Inadequate preparation	2635.50	0.0790	Fail to reject null	61.66	73.34
Domain 4: Problems with peers (e.g., fellow ward nurses)	2859.00	0.0050	Reject null	58.33	76.67
Domain 5: Problems with supervisors (e.g., head nurses)	2787.50	0.0150	Reject null	59.40	75.60
Domain 6: Workload	2938.50	0.0020	Reject null	57.14	77.86
Domain 7: Uncertainty concerning treatment	2627.50	0.0810	Fail to reject null	61.78	73.22
Domain 8: Patients and their families	2958.50	0.0010	Reject null	56.84	78.16
Domain 9: Discrimination	1797.00	0.0400	Reject null	74.18	60.82
Domain 10: Compensation and benefits	2492.50	0.2640	Fail to reject null	63.80	71.20

The Mann–Whitney U test revealed significant differences between public and private hospital nurses in six domains: *Conflict with Providers, Problems with Peers, Problems with Supervisors, Workload, Patients and Their Families*, and *Discrimination*. These results indicate that occupational stress and cognitive workload differ significantly between public and private nurses in these areas. Conversely, no significant differences were found in the domains of *Death and Dying of Patients, Inadequate Preparation, Uncertainty Concerning Treatment*, and *Compensation and Benefits*, suggesting comparable experiences between public and private nurses in these aspects.

Overall, the study demonstrates that occupational stress among nurses in the National Capital Region varies notably between public and private tertiary hospitals, with private hospital nurses experiencing higher stress and cognitive workload in multiple domains. These findings are consistent with prior research identifying heavy workloads, staffing shortages, and communication conflicts as major contributors to nursing stress (Bautista et al. 2019; Yuan et al. 2023; Werke and Weret 2023; Pavek et al. 2024). The elevated stress among private hospital nurses may be attributed to organizational and operational factors, such as stricter supervision, higher patient expectations, and performance-based evaluation systems (Alumran et al. 2020; Abbas et al. 2025). In contrast, although public hospital nurses often manage larger patient volumes, their reported stress levels were lower, potentially due to reduced administrative pressures and less hierarchical oversight (Noor et al. 2023).

5.3 Proposed Improvements

Based on the findings of this study, the following recommendations are proposed to address the key sources of occupational stress among nurses. These recommendations focus on the top three stressors identified: workload, patients and their families, death and dying of patients; as well as the additional domain of compensation and benefits introduced by the researchers. The significant differences revealed through the Mann–Whitney U tests are also addressed with tailored recommendations across six occupational stress domains.

Recommendations for stress derived from workload
Given that workload emerged as the highest-ranked stressor among the ten occupational stress domains, and that private hospital nurses reported significantly higher stress than their public hospital counterparts, healthcare institutions are encouraged to adopt the Workload Indicators of Staffing Need (WISN) for staffing planning based on actual service demands (World Health Organization 2023). WISN is a human resource management tool that analyzes workload components, available working time, activity standards, annual service data, and existing staffing levels. Unlike fixed staffing ratios, it accounts for the specific workload demands of different clinical services.

Recommendations for stress derived from patients and their families, and discrimination
Because these stressors often originate from external actors beyond the direct control of management, hospitals must shift focus toward strengthening internal support systems, such as counseling services and structured wellness programs. Although many institutions currently offer these services reported by 36 nurses in public hospitals and 51 in private hospitals, low utilization suggests that merely providing access is insufficient; administrators must actively promote these programs to destigmatize mental health support and ensure effective engagement.

To systematically address these challenges, hospitals are encouraged to implement a psychoeducational intervention based on the RISE (Resilience, Insight, Self-Compassion, Empowerment) program. RISE is an evidence-based, 8-week group intervention shown to significantly enhance resilience and reduce burnout by equipping nurses with the emotional tools to navigate difficult interpersonal dynamics (Sawyer et al. 2021).

Recommendations for stress derived from problems with providers, peers, and supervisors
To mitigate occupational stress arising from interprofessional and interpersonal conflicts, healthcare institutions should transition toward a shared governance model. This organizational framework empowers nurses by involving them in clinical decision-making and policy development, which effectively reduces hierarchical barriers and fosters mutual respect between nurses, physicians, and supervisors. Lintag et al. (2022) found that shared governance in Level 3 public hospitals in Region III strengthened collaboration and commitment among nurses, supervisors, and physicians. Although evidence from private hospitals remains limited, adopting this model may help reduce hierarchical barriers and promote inclusive interprofessional relationships.

To support this structure, hospitals should update clinical manuals to clearly define professional roles and escalation pathways. Key to this transition is the adoption of the ISBAR (Identify, Situation, Background, Assessment, Recommendation) communication framework, which standardizes information exchange to minimize misunderstandings during handovers and provider consultations.Although Philippine-based evidence is limited, Garma et al. (2018) reported improved collaborative practice following ISBAR implementation in a Level 3 public hospital in Manila.

Recommendations for stress derived from death and dying of patients
Since stress related to the death and dying of patients ranked as the third highest stressor in this study, healthcare institutions must prioritize emotional resilience through both immediate and systemic interventions. In the short term, hospitals should implement structured debriefing sessions facilitated by trained mental health professionals or nurse leaders immediately following patient deaths (Bucoy 2020). While basic counseling services are available in many institutions, management must actively work to destigmatize these resources and encourage utilization through visible leadership support and "buddy" mentorship systems.

Recommendations for stress derived from compensation and benefits
Healthcare institutions must prioritize both the operational efficiency of payroll and the strategic restructuring of compensation. In the short term, hospitals should implement automated payroll systems and standardized payout calendars to ensure the timely release of salaries, hazard pay, and overtime incentives. This administrative improvement reduces financial uncertainty at a relatively low cost and addresses the persistent issue of delayed incentives common in the Philippine healthcare context (Sapar and Oducaco 2021).

For long-term organizational resilience, hospitals should transition toward competency-based compensation models. Unlike fixed salary structures, this model links pay to specialized skills, advanced certifications, and clinical expertise, incentivizing professional growth while improving retention without requiring immediate, across-the-board increases. Furthermore, to offset the impact of rising living costs, administrators should expand non-monetary benefits, such as peer-support circles and confidential employee assistance programs. Strengthening the communication and

transparency of these available resources ensures that nurses perceive the distribution of benefits as fair and consistent. By combining digitized payroll with a merit-based pay framework, hospitals can significantly enhance the economic security and job satisfaction of the nursing workforce.

6. Conclusion

This study successfully fulfilled its primary objectives by evaluating and comparing the occupational stress and cognitive workload of staff nurses across Level 3 public and private hospitals in the National Capital Region, Philippines.

Through the utilization of the modified Revised Nursing Stress Scale (RNSS) and descriptive statistics, the researchers identified *workload*, interactions with *patients and families*, and *death and dying of patients* as the leading stressors in the nursing profession. The Mann-Whitney U Test validated significant disparities between the two sectors, specifically in six domains: *workload, conflict with providers, problems with peers, problems with supervisors, patients and their families*, and *discrimination*. Crucially, the analysis revealed that private hospital nurses experience significantly higher stress levels across most domains compared to their public sector counterparts, rejecting the null hypothesis and justifying the need for targeted management interventions.

The unique research contribution of this study lies in its integration of industrial engineering (IE) methodologies, specifically human factors and workload optimization, within the healthcare management framework. By proposing the Workload Indicators of Staffing Need (WISN) tool, shared governance, ISBAR (Identify, Situation, Background, Assessment, Recommendation) communication framework, and the RISE resilience framework, the study moves beyond traditional qualitative observations to provide a data-driven, actionable blueprint for hospital administrators.

Furthermore, the introduction of compensation and benefits as an additional domain specific to the Philippine context provides a novel perspective on the economic drivers of nursing stress. The research concludes that mitigating stress in high-acuity environments requires a shift toward Shared Governance and automated, merit-based systems. These findings serve as a critical foundation for policy-making aimed at improving nurse retention and ensuring the resilience of the Philippine healthcare system.

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