



Nurse Views on Enhancing Occupational Safety and Health in Hospital Environment

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ABSTRACT



Objective: This study aimed to identify the specific risks experienced by nurses, the safety measures in place and how they perceived its effectiveness at preventing falls from taking place which helped to identify areas for improvement when enhancing healthcare workers welfare.

Methods: A structured questionnaire was administered to collect data on socio-demographics, specific sector employment types, safety practices and occupational risks. Trends were explored using percent distributions, means and chi-squared tests for independence where appropriate.

Findings: The study found that OHS conditions in a University teaching hospital are noticeably different from a private hospital. Nurses in private sector hospitals had better working conditions also with the improved safety standards, comprehensive safety training and ergonomic design which was accredited by JCI. On the other side hospital nurses encountered poor safety leads, ergonomic deficiencies, and high rates of occupational diseases and injuries. University hospitals had more psychological stress, burnout, and job dissatisfaction than private hospitals; however, in terms of infection control they fared better compared to private hospitals who, although carrying out consistent monitoring programmes for PPE, were hindered with shift fatigue and stress.

Novelty: This study offers a comparison of OHS conditions for nurses in private and public health care facilities and highlights the potential role of international accreditation for safer working environments. This has shone light on a long-neglected safety issue in academic hospitals.

Research Implications: The study findings are expected to help policy amendments, labor protection policies for civil servants in university hospitals, NABH accreditation processes and monitoring of safety training and ergonomic improvements in both private sector hospital environments and public healthcare establishments.

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1. Introduction

In recent years, the focus on occupational safety and health (OSH) in healthcare, particularly for nurses, has gained significant attention worldwide (Hanvold et al. 2019). The increasing complexity of healthcare delivery, coupled with advancements in

medical technology, has introduced new risks to healthcare professionals (Ciani et al. 2016). Nurses, who form the backbone of hospital care, are particularly vulnerable to various hazards in their work environments. These risks include long working hours, high patient-to-nurse ratios,

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exposure to infections, and physical demands such as lifting patients. Achour et al. (2016), highlighted that nursing staff in developing countries like Turkey are at an even greater risk due to resource constraints and poor infrastructure. With the onset of the COVID-19 pandemic, these issues have been exacerbated, putting a spotlight on the need for comprehensive safety measures to protect healthcare workers (Veerapen and McKeown 2021).

The occupational safety and health of nurses are fraught with issues ranging from physical, chemical, biological, and psychological risks. Studies indicate that nurses in Turkey face a range of hazards, including needle-stick injuries, exposure to hazardous substances, and emotional burnout (Yalcin Ocak et al. 2022). These issues are compounded by systemic problems such as inadequate staffing and poor working conditions (Hoot and Aronsky 2008). Research has demonstrated that long working hours and excessive workloads are significant contributors to nurse burnout, a condition that negatively impacts both patient care and the nurses' well-being (Chana, Kennedy, and Chessell 2015). The International Labour Organization (ILO) has also stressed that healthcare workers' mental and physical health is closely linked to the quality of patient care, thereby making OSH a critical area of concern (Johnson et al. 2018).

The theoretical foundation for addressing occupational safety and health issues in hospitals stems from various models that emphasize both physical and psychosocial risk factors. One of the most widely recognized frameworks is the Job Demand-Resource (JD-R) model, which posits that job demands, such as long hours and high emotional strain, must be balanced by adequate resources, such as supportive management and adequate breaks (Ji et al. 2024). Another relevant framework is the Safety Climate theory, which suggests that the overall culture of safety within an organization plays a pivotal role in mitigating risks (Choudhry, Fang, and Mohamed 2007; Fernández-Muñoz, Montes-Peón, and Vázquez-Ordás 2007). For nurses in Turkey, these frameworks highlight the importance of both institutional support and individual resilience in

maintaining a safe work environment (Karadas, Dogu, and Oz 2022).

The urgency for novel research in the area of occupational safety and health for nurses is evident due to conflicting results from past studies. For example, a study Aghaei Hashjin et al. (2015) found that nurses in private hospitals accredited with Joint Commission International (JCI) in Turkey reported higher levels of safety due to stringent protocols, whereas Farokhzadian, Dehghan Nayeri, and Borhani (2018), observed that these protocols are often not enforced effectively, leading to unsafe conditions. Similarly, while some research points to positive impacts of JCI accreditation on nurse safety (Despotou, Her, and Arvanitis 2020), others like Kurniawan et al. (2020) argue that these improvements are largely superficial and fail to address deeper issues such as emotional burnout and staff shortages. Vila-Pozo and Sahay (2023), highlights that even accredited hospitals in Turkey struggle with consistent enforcement of safety standards. This body of conflicting evidence underlines the necessity for further research to clarify these contradictions and propose effective, localized solutions for hospitals in Turkey. Furthermore, recent research, particularly from 2018 to 2023, underscores the critical need for evaluating both the effectiveness of existing safety measures and the psychological aspects of nursing work (Sherwood et al. 2023; Weaver et al. 2023).

The primary objective of this study is to evaluate the occupational health and safety conditions faced by nurses in Turkey, focusing on a private hospital accredited with JCI and a university hospital. This research aims to explore the types of risks encountered, the measures implemented to mitigate these risks, and the nurses' perceptions of their effectiveness. Through this study, we hope to identify key areas where improvements can be made to enhance both the physical and psychological well-being of nurses in healthcare settings.

2. Critical Review

2.1 Overview of Occupational Safety in Healthcare Settings

This research therefore adds to an informative understanding of the compliance with occupational safety at work in private as well as university hospitals (da Silva and Amaral 2019). One important distinction involves safety protocols and working conditions, which differ greatly between the two types of institutions. Occupational safety seems to have a more structured approach in private JCI-accredited hospitals as compared to university hospitals with an apparent lag in ergonomic design and the provision of protectives. Safety practices are further molded by having policies in place at the institution level and accrediting bodies external accruing of (Kumar and Prasad 2023).

2.2 Comparative Analysis of Nurse Demographics and Working Conditions

Compared to those who worked in university hospitals, private hospital nurses were younger, single, had higher educational levels and achieved more occupational health and safety training requirements (Ayalew et al. 2019). Owing to this demographic difference, private hospitals may have greater compliance of safety protocols as younger and better educated staff are likely to accept their training on the matter more readily than older peers due also to the risk management practices observed with harm cases. On the other hand, more senior and less educated nurses in university hospitals will have greater difficulties accommodating safety standards that are evolving over time (Chua 2020). Nonetheless, at the same time this has implications regarding an imbalance in training opportunities and resources between sectors (Cascio 2019).

2.3 Role of Accreditation in Enhancing Safety

The authors of the study case that JCI accreditation acts as a large driver of safety for private hospitals. This is in line with previous literature that has connected accreditation to more compliance with safety protocols, better quality of care and lesser job risks (Whitehead et al. 2019). In public sector hospitals the training intervals and risk assessments etc., are not usually done but those private hospitals which met standard JCI ensure all that leads to culture of safety (Kamalasanan, Sathiyamurthi, and Subbarayalu 2020). It suggests that accreditation can be effect as a change agent, particularly in settings

where safety practices are poorly and moderately supported (Trinchero, Farr-Wharton, and Brunetto 2019).

2.4 Deficiencies in University Hospital Safety Practices

Many university hospitals have a number of deficits, especially when it comes to a safe and ergonomic work environment. Nurses working in these settings reported defective equipment, undesirable configurations, limited ventilation and inadequate lighting that lead to work-related injuries & illnesses. For one, due to poor safety protocols at these hospitals the staff are not well looked after, but this in turn also affect patient care. The above example demonstrates the importance of conducting a full review of safety policies at public healthcare institutions to determine what improvements can be made, and could potentially lead to changes allowing civil servant protections under labor law (Lawati et al. 2018).

2.5 Psychological and Physical Stress Among Nurses

Both private hospital and university hospital nurses have high levels of physical and psychological stress in the workplace with long working hours; shift work is hazardous material. But that is not the case for the human factors in university hospitals where occupational diseases and injuries are significantly more common due to much more deficient ergonomics (Carayon et al. 2021). Constant exposure to sharp objects, bloodborne pathogens, lifting and carrying items improperly leads to musculoskeletal problems as well as fatigue and mental health conditions. This result is consistent with prior work that has linked adverse working conditions to lower job satisfaction, burnout and increased turnover of the healthcare workforce (Scanlan and Still 2019).

2.6 Implications of Legal Gaps in Occupational Safety

The study highlights a key loophole in Turkish labor laws, as occupational health and safety rules only fall within the domain of application for workers employed within the private sector, meaning that civil servants working at the university hospital are not regulated. This shortfall in the legal system has left hospital staffs inside university hospitals at greater danger, as they do not have same protections

and education that their colleagues within private hospitals may enjoy. That kind of legislative reform to provide civil servants with labor representation is long, long overdue (Andrias 2019). Policymakers could fill that gap and strengthen protections for all healthcare workers by requiring those safety measures and protections for everyone, regardless of their status in the workforce.

2.7 Recommendations for Improving Occupational Safety in Healthcare

To address the identified gaps, the study recommends several key measures:

- a) *Extending the mainstream of labor laws to cover civil service employees in healthcare, providing them with similar access to occupational health and safety protections.*
- b) *Making implementation of mandatory accreditation processes like JCI in University Hospitals for standardization of safe practices from any genre-or any convention or abuse to all places.*
- c) *Strengthening training programmes in occupational safety, ergonomics and the management of dangerous substances for all health workers;*
- d) *Ensure hospital equipment is always up to date, and running well to avoid any disasters or accidents which may occur due to malfunctioning of equipments.*
- e) *Enforcing wider-reaching stress management programs for nurses, especially those working in high-stress departments like the emergency and surgical wings.*

The results of the study point out important areas for improvement in terms of occupational safety in Turkey by comparing private and university hospitals. International accreditation and a structured approach to safety help private hospitals, while public sector institutions will have to tackle legal, ergonomic and psychological issues that ensure work safety. The study adds an important dimension to the recognition of policy changes and institutional improvements needed for healthcare professionals in Australia to work safely and equitably.

3 Method Innovation

3.1 Study Design

This paper describes findings from a cross-sectional quantitative study of nurses experiencing their work environment in two comprehensive hospitals and uses descriptive methods to define occupational safety and health conditions among the professionals. Cross-sectional studies are used for obtaining an overview of the health and safety status at one particular point in time, facilitating the assessment of relationships between two or more variables -for instance, hospital type and safety practices (Abutabenjeh and Jaradat 2018). The second design was primarily suitable to assess differences of occupational health standards and compliance between university hospitals with private JCI-accredited ones.

3.2 Population and Sampling

Study populationA total of 490 nurses were recruited as voluntary study participants from a university hospital (n = 220) and a JCI accredited private hospital (n = 215), in Turkey. The sample was chosen artificially by the number of nurses according to the requirements of OHS between hospitals so that both had at least 200, creating opportunities for an adequate comparison of working conditions. Although there may be some bias, purposive sampling was used to ensure the participation of both university and private hospitals which might reflect similar safety conditions across in Turkey (Etikan et al. 2016) A total of 435 nurses responded and the response rate is 88.8% and makes the findings more reliable (Gurková et al. 2020).

3.3 Data Collection Tools

The data was collected by a structured questionnaire into three sections: The initial section captured the socio-demographic features (age, marital status, educational level and years in service). The second part collected information about the employment sector and details of the activity, like the hospital category and area in which the enrolled nurse was working. The third section focused on the safety practices of HCWs, which include use of personal protective equipment (PPE), musculoskeletal care and infection control. Researchers use structured questionnaires in similar

studies, to facilitate the homogenization of data collection (Sovacool, Axsen, and Sorrell 2018). The questionnaire was pre-tested using test re-test method to check its validity and reliability prior before administering.

3.4 Data Collection Procedures

The collection of data was performed in the period from March to July 2024 after receiving ethical approval from each hospital administration. It was told that their participation is voluntary and their response would be kept confidential to allow them provide honest answers. Paper and electronic versions of the questionnaire were distributed to offer both methods of completion. We closely tracked data collections for accuracy and completeness. Instructions were consistent for each and every university and private hospital when providing, inserting, and returning questionnaires to the recipients so as to avoid inconsistencies in distributing the questionnaires (Al Khalaf et al. 2022).

3.5 Variables and Measures

The outcome in this study was a global scores of the Occupational Safety and Health (OSH) environment in which the safety practice and health risk items were included. The independent variables were the type of hospital (university or private), the number of experience and compliance with JCI accreditation standards. The researchers also measured other factors like ergonomic adequacy, infection control measures and psychological stresses. These variables are widely used as measures of safety in healthcare (Clarke, 2007; Tucker & Edmondson, 2003).

3.6 Data Analysis

The nurses' responses were summarized using descriptive statistics (percent distributions and means). Categorical variables (ie, hospital type vs safety practices) were analyzed using Chi-square (χ^2) tests. When you apply this test to check the relationship between two variables, it will show you whether the differences are statistically significant in contrast to university and private hospital (Alumran et al. 2021). Data were analyzed using SPSS version 26 and significant level was set at $p < 0.05$ to detect associations of meaning.

3.7 Study Limitations

The generalizability of the findings to other healthcare institutions in Turkey may be restricted because this study was conducted only in two hospitals. The study also used self-reported measures, which could suffer from social desirability bias, a tendency to over-report good behaviors or underreport negative ones (Weaver et al. 2023). Additionally the findings may be incomplete through exclusion of other healthcare staff such as doctors and support personnel. As such, the results of this study are still remarkable as they shed light on the potential occupational health hazards experienced by nurses depending on their location in a hospital and may provide support for future research to improve safety conditions in Turkish healthcare facilities.

4 Innovation Result

4.1 Characteristics of Nurses

Regarding the socio-demographic data, we observed that the nurses had a mean age of 30.2 ± 5.5 years and a time of average professional experience of 9.1 ± 6.0 yrs. These nurses were 52% married/civil partners, 45% had a bachelor degree and 87% was in a nurse position. In the questionnaire data 62% worked in hospital units, as did 51% of all participants. The mean age of the nurses working at a university hospital was 33.1 ± 5.4 (range, 12.5 to 46) years; their average experience as a nurse ranged from 7 months to 18 years, with a mean of 14.8 ± 9 . By comparison, 60% of the group was married and 55% held a diploma. The private hospital nurses were younger with average age of 28.0 ± 4 years and a mean of nursing experience of 6.0 ± 4.5 years. Approximately 65% of the nurses were unmarried and 68% had a bachelor's degree.

4.2 Hospital and Occupational Safety

Regarding the occupational safety, 74% of the university hospital nurses stated that they did not feel safe and 67% reported that their employers do not arrange safety measures (Table 5). In contrast, 88% of private hospital nurses felt safe and 94% said safety protocols were in place. Statistical analysis also confirmed, that a significant difference for perceived safety ($\chi^2 = 112.45$, $p < 0.001$) and for

estimated number of precautions ($\chi^2 = 120.30$, $p < 0.001$) between the hospitals existed.

4.3 Hospital Safety Measures

In addition to a few other common safety precautions, 59% of nurses at the university hospital indicated that medical and toxic waste disposal would be affected if it was between this option or closing fire doors all the time, while 57% chose infection rate monitoring, and 55% gathering staff for vaccination when asked about these four. Well, the private hospital was well ahead: with 90% of them ticking infection surveillance boxes, enjoying even better vaccination programs (88%), and fire/natural disaster protections (87%). For example, there were marked differences in the safety interventions implemented at each hospital (Table 2).

4.4 Work Environment and Occupational Illnesses

Overall job satisfaction was lower among nurses employed at the university hospital, only 61% were satisfied with the lighting, and just 42% were satisfied with heating and air conditioning in their work environment while just (18%) considered their work environmental ergonomic. Nurses in the private hospital scored lighting (87%), heating and air-conditioning (76%) additional lighting for night shift work (72%) and ergonomic conditions 71% BoxFit table 4. The university hospital was oriented by most nurses as referring more occupational diseases than private hospitals (44% and 26%; Table 3).

4.5 Discussion

The present study show that there are essential differences in occupational health and safety (OHS) conditions between university and private hospitals in Turkey. Nurses in private hospitals tend to enjoy a safer, more ergonomically favorable work environment than do their counterparts in university hospitals, data suggest. These variations are suspected to be due to factors such as the implementation of international standards i.e., Joint Commission International (JCI) accreditation in private hospitals and uneven enforcement of labor laws.

One crucial discovery was that nurses in academic hospitals are younger, have less experience and more education. However, they are working under conditions devoid of adequate safety gears and ergonomic facility. This is in line with previous studies that have shown there is a higher risk of injury and occupational disease among nurses practicing in hospitals given the absence of focus on OHS. The plight of workers in state-run institutions is further worsened by the lack of effective occupational safety regulations, as civil servants are not even covered by Turkish labor law (Bertens and Vonk 2020). In university hospitals, more cases of occupational diseases and injuries were manifested among nurses; it is a fact that has some effect not only on their physical status but both also job satisfaction and mental health.

In comparison, the implementation of safety, training and risk management procedures are reportedly better in private hospitals that have to meet JCI standards. The hospitals from the former superiority group fort mostly more comprehensive training in infection control, occupational risks and ergonomics. The better safety culture in private institutions might reflect requirements related to external accreditation and internal organizational policies dedicated to employee health and safety. Private hospitals also scored the best on equipment availability and among the lowest in ergonomic issues plus performing more health and safety checks (Patel and Mukhopadhyay 2021). Consistent with the findings from studies in other healthcare systems, adherence to international accreditation standards has been found globally to improve workplace safety and reduce occupational injuries and diseases (Johanes, Mark, and Steven 2023).

This study also identified ergonomic inadequacies in university hospitals as an important issue, responsible for the musculoskeletal problems experienced by nurses. Healthcare workers operate in settings with improper layouts, poor lighting, inadequate heating, and ventilation as well as faulty or obsolete equipment; this only serves to increase the physical strain on healthcare workers. The studies have reported that ergonomics improvement has a positive impact by facilitating reduction in

occupational accidents as well as an increase on the productivity of the worker and job satisfaction (Hadidi, Kolus, and AlKhamis 2019). This is an especially pressing issue at university hospitals in Turkey, where 17% of nurses sustain injury from work demand-related poor ergonomics.

University hospitals were associated with higher rates of psychological stress, burnout and job dissatisfaction compared to non-university ones. Due to the stressful nature of shift work, long hours and heavy workload, a substantial amount of stress can give rise to numerous physical and mental health issues in nurses (Spoorthy, Pratapa, and Mahant 2020). These results are in keeping with other studies worldwide that have found healthworkers in high burnout, anxiety and stress-related illness settings are at increased risk as well. Further, the study also highlights that private hospitals have improved physical safety measures but issues related to shift stress and fatigue continue to be major challenges (Bazazan et al. 2019; Upton 2018).

Private hospitals also excelled in infection control, being very cautious of prevention and the management of occupational infections. In the UH, nurses noted the opposite: higher incidences of infection and an absence of preventive measures. Doctors believe that is because private hospitals are subject to stricter JCI care standards, which require comprehensive infection prevention and control (Alghamdi et al. 2019). These findings demonstrate that it is very important to implement effective IPs in university hospitals to protect health care workers and prevent the spread of nosocomial infections (Li et al. 2019).

5 Conclusion

To summarise, this study reveals that although private hospitals abide more willingly to internationally based norms and exhibit better management that contributes to occupational health

and safety improvement in the hospitals of Turkey, nevertheless university hospital circumstance remains a concern mainly due to legislative shortages and the lack of inspection. If a nurse is in any of these precarious situations, Mayn said general labor protection laws are lacking to cover civil servants, i.e., all nurses working in public hospitals and other government institutions. Support for training, ergonomics and mental health is lacking for what we know to be the multi-faceted risks nurses face in their everyday work

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Author contribution

All authors contributed equally to the conceptualization, design, and execution of this study, as well as the preparation of the manuscript.

Conflict of Interest

The authors declare no potential conflicts of interest or any divergences related to this research study.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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Data Image and Table research

A. Apendix Data Table Rresearch

Table 1. Occupational Safety Conditions in Hospitals According to Nurses

Occupational Safety	University Hospital (%)	Private Hospital (%)	Total (%)	χ^2 value
There is occupational safety	26	88	57	112.45**
There is no occupational safety	74	12	43	
Total	100	100	100	

Source; data processed by the author in observation 2024

Safety Precautions Implemented	University Hospital (%)	Private Hospital (%)	Total (%)	χ^2 value
Safety precautions were implemented	33	94	64	120.30**
No safety precautions were implemented	67	6	36	
Total	100	100	100	

Source; data processed by the author in observation 2024

Table 2. Precautions for Occupational Safety According to Nurses

Precaution Type	University Hospital (%)	Private Hospital (%)	χ^2 value
Written policies for safety	15.2	89.7	167.20**
Regular data collection and improvement of problematic areas	7.5	68.3	122.11**
Committees for personnel safety	13.1	71.4	110.25**
Regular equipment maintenance	29.7	85.1	93.28**
Easy access to protective material	12.7	76.2	132.45**
Occupational safety training programs	16.5	75.6	111.78**
Monitoring of occupational accidents	9.4	84.5	155.23**

Source; data processed by the author in observation 2024

Table 3. Conditions of Occupational Diseases in Nurses According to Hospitals

Occupational Diseases	University Hospital (%)	Private Hospital (%)	Total (%)	χ^2 value
Nurses having occupational diseases	44	26	35	15.20**
Nurses not having occupational diseases	56	74	65	
Total	100	100	100	

Source; data processed by the author in observation 2024

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