

# Nurse staff Working Hours and their exposure to Occupational Health Hazard at Saudi Arabia Hospitals: cross sectional study

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## Abstract

Low basic staffing levels generally, challenges finding and retaining qualified employees, and the absence of replacements in the event of sick leave could all contribute to the shortage of qualified staffing. Accidents and malpractice are typically attributed to human error, but in recent years, there has been a greater awareness of organizational and structural factors, such as the work environment, workload, shift patterns, qualified and adequate staffing, and organizational structure **Aim of the Study:** The current study aims to determine the relationship between hospital staff nurses' working hours and occupational health hazards. **Subject and Method:** A descriptive correlation, quantitative, cross sectional research design was utilized to achieve the aim of the current research. Settings: Nurses employed in all government hospitals in and near Hail, Saudi Arabia, including King Khaled Hospital, Hail General Hospital, King Salman Hospital, and Sharaf Hospital, provided the data. Data were gathered by two tools divided as following; Working Hours Questionnaire and Occupational Health Hazards Questionnaire. **Finding:** 51.2% of staff nurses work 50 hours or more per week, 36.2% work unlimited paid overtime, 41.9% work paid overtime because of a lack of staff, 54.2% work unlimited unpaid overtime, and 54.2% work unpaid overtime because of a lack of staff and excessive workload. Furthermore, there are positive correlations between health hazards and (the number of working hours you work each week as well as the number of overtime hours you work each week). **Conclusion:** This study found that over two thirds of staff nurses had high exposure to physical hazards, while one third had low exposure to physical hazards. Additionally, whereas the minority of staff nurses had substantial exposure to biological dangers, the majority had modest exposure. Additionally, this study revealed that the majority of staff nurses had high exposure to both organic and inorganic problems, and that over half had high exposure to psychosocial hazards, while fewer than half had low exposure to psychosocial hazards. Clear and precise job descriptions, flexible work arrangements, equitable treatment, and frequent meetings between managers and staff nurses to address any issues and resolve any hazardous hazards.

## Introduction:

The healthcare system is going to face a number of difficulties in the years to come. Having enough trained staff to manage the volume of patients and the complexity of care and treatment is one of these significant obstacles (Jha et al., 2010; Regjeringen, 2021). Low basic staffing levels generally, challenges finding and retaining qualified employees, and the absence of replacements in the event of sick leave could all contribute to the shortage of qualified staffing (Ose and Busch, 2020).

Organizational instability brought on by temporary employees, the employment of unqualified substitutes, turnover, and reorganizations can result in increased stress, production demands, and a higher risk of patient injury (Eklof et al., 2014; Jha et al., 2010). Accidents and malpractice are typically attributed to human error, but in recent years, there has been a greater awareness of organizational and structural factors, such as the work environment, workload, shift patterns, qualified and adequate staffing, and organizational structure (Vincent et al., 2000; Reason, 1997;

The World Health Organization (WHO) declared a worldwide pandemic in March 2020 as a result of the COVID-19 virus's international spread, which caused numerous fatalities as well as significant social and economic issues. Healthcare professionals on the front lines have experienced tremendous physical and mental strain in the interim. Under these conditions, nurses endure social stigma, work long hours in high-demand settings, and are always at risk of getting sick while apart from their families. As a result, the pandemic caused the nursing profession to face many difficulties, such as increased patient volumes and loads as well as revised COVID-19 protocols (Pappa et al., 2020; Al-Bsheish et al., 2021).

The length of a nurse's workday is crucial to both the quality of treatment and the effective fight against infection. Due to a nursing shortage, nurses were forced to work longer hours during the epidemic, further taxing them to the limit. May 2020, in that order. Long hours have a detrimental impact on caregivers' health and well-being and care quality. Prior to the pandemic, longer shifts were linked to higher levels of unhappiness, better ratings for the quality of treatment, and higher rates of care left undone. Unexpectedly, there was no correlation between care outcomes and the 12-hour day or night shift. Because of these contradictory findings, more investigation is necessary. The extended working hours may be linked to the lower caliber of care compared with nurses working fewer. Additionally, a lower reported quality of care was linked to longer duty hours (Lorente et al., 2021; Al-Rawajfah et al., 2021).

One definition of shiftwork is a work schedule that deviates from regular business hours. Working outside of regular business hours is commonly referred to as shift work. Work within day hours refers to a workday that is typically finished in a collection of hours, beginning at or after 7 am and ending before 7 pm Monday through Friday. This includes working no more than 8 hours per day and 40 hours or fewer per week (not including overtime). To make matters worse, shifts dictate working hours, especially for nurses. Nurses may perform shifts of four hours or sixteen to twenty hours, with varying rest periods in between. The nursing profession's typical shiftwork pattern entails working a variety of shifts or longer shifts in an unpredictable manner (Min et al., 2019). As a result, shift labor is thought to be required in hospitals and residential homes to guarantee continuity of care.

One of the most common causes of circadian rhythm disruption is shift work, and night shifts in particular. This can lead to major changes in sleep patterns and biological processes, which can then have an adverse effect on one's physical and mental health as well as impair one's ability to perform at work. Numerous research have also examined how shift work affects employees' physical health (Bae, 2021).

Additionally, nurses play a crucial role in the system that delivers healthcare. Nurses deal with a range of occupational health issues while performing their jobs, which can be divided into mechanical, biological, chemical, physical, and psychosocial dangers. Compared to senior registered nurses, nursing staff are more vulnerable to occupational harm because they are younger, less experienced, unskilled, less conscious of self-defense, and lack professional awareness of protective measures (Nabil et al., 2018). Although it requires a lot of dedication, the nursing profession also deals with the health and, most significantly, the lives of patients and society at large. Nurses continue to report high rates of work-related sickness and injury because they are exposed to numerous occupational dangers while doing their tasks. Nurses are at the forefront of many occupational health dangers due to their work environment and duties, which might result in acute health issues. Common occupational health risks in the healthcare setting include biological, physical, chemical, and psychosocial risks (Denge & Rakhudu, 2022).

Body discomfort and biological disruptions, including sleep, leg, back, and body pain, as well as circulation and arm pain, changes in appetite, and digestive issues, are referred to as physical dangers. breathing issues, visual issues, and hearing issues (Woetzel et al., 2020). According to Amare et al. (2021), psychological hazards include negative self-perception, a pessimistic view of life in general, and mood swings like annoyance with everything, a lack of confidence, a sense of emptiness, a loss of

self-control, a sense of bitterness, a sense of defeat, uncontrollable crying, a willingness to give up everything, a persistent sense of hopelessness, a negative self-image, and trouble focusing.

Social hazards, on the other hand, are characterized by a sense of loneliness and challenges in familial relationships, including insensitivity toward others, family relationship difficulties, affective relation difficulties, difficulty making friends, social isolation, difficulty making decisions about one's personal life, general disinterest in others, and uncontrollable aggression. Notwithstanding the critical nature of the work performed by nursing staff in hospital settings, a number of historical and social factors are also at play, such as the lack of social recognition demonstrated by the position's undervaluation and invisibility in comparison to other healthcare professionals (Ahmed & Shareef, 2019). Because asepsis and cleanliness are necessary for successful medical procedures, environmental dangers, a sufficient water supply, and a clean general atmosphere are essential for safeguarding employees and patients in a healthcare facility.

Combating several health risks to employees, such as the spread of tuberculosis and exposure to anesthetic gases, requires adequate natural or artificial ventilation. The physical risks include things like radiation (X-rays, lasers, etc.), electricity, high temperatures, and noise that can harm tissue and cause other injuries (Mossburg et al., 2019). Chemical dangers include a variety of compounds that are harmful or irritating to the body's systems, such as solvents, pharmaceuticals, and gases (such as ethylene oxide and anesthetic gas wastes). Mechanical hazards are elements of the workplace that raise the possibility of mishaps, cuts, injuries, or discomfort (e.g., inadequate equipment, slick floors, improper lifting devices, etc.). Psychosocial hazards are elements and circumstances related to job duties or workplaces that increase or cause the likelihood of stress, emotional strain, or interpersonal issues (Rai et al., 2020).

Long work hours and the correspondingly elevated risk of illnesses and injuries have also raised concerns. Thousands of workers expose themselves to potentially various occupational hazards since they spend a substantial amount of time at their place of employment. It is well known that many people in today's market must work several full-time jobs in order to "earn a living," and many of them are unaware of the negative health effects of these work habits (Persaud and Williams, 2017).

### **Significant of the study:**

Long work hours are strongly linked to a number of diseases and injuries, such as hypertension, diabetes, cardiovascular disease, musculoskeletal disorders, stress, exhaustion, chronic infections, and substance addiction, according to numerous research. Additionally, there is a higher chance of unfavorable work-related outcomes for those who put in extra hours. According to estimates, the number of deaths from occupational diseases and injuries in 2017 was greater than the number from breast cancer, auto accidents, or prostate cancer. This emphasizes how important it is for society as a whole to lower occupational diseases and injuries. Williams and Persaud (2017).

Compared to positions without overtime, working in jobs with overtime schedules was linked to a 61% greater injury hazard risk. A 37% higher risk rate was linked to working 12 hours or more per day, while a 23% higher risk rate was linked to working 60 hours or more per week. The injury rate (per 100 accumulated worker-years in a specific schedule) increased in direct proportion to the amount of hours per day (or per week) in the workers' regular schedule, indicating a high dose-response impact (Yarmohammadi et al, 2016).

In 2015, a study by the National Institute for Occupational Safety and Health (NIOSH) discovered that first-year medical residents who work longer shifts than twenty-four are five times more likely to have a near-miss accident and two times more likely to be involved in a car accident after their shift (Hittle & Gillespie, 2018).

We need this study to determine whether there is a relationship between working hours and occupational health because, based on my experience as a hospital supervisor nurse, the nurses there are worn out from long work hours, and many of them suffer from low back pain, lung diseases, stress, headaches, and hepatitis (C).

### **Aim of the study:**

#### **Aim of the Study**

The current study aims to determine the relationship between hospital staff nurses' working hours and occupational health hazards.

**Research Questions:**

2. How do working hours and occupational health risks relate to each other?

**Subject and Method:****Research design:**

A descriptive correlation, quantitative, cross sectional research design was utilized to achieve the aim of the current research.

**Settings:**

Nurses employed in all government hospitals in and near Hail, Saudi Arabia, including King Khaled Hospital, Hail General Hospital, King Salman Hospital, and Sharaf Hospital, provided the data. These facilities offer ongoing medical care in a variety of specialized clinics to all demographics and their families.

**Sample:**

All staff nurses employed in critical care units throughout the four hospitals (Intensive Care Unit (ICU), Dialysis Unit, Neonatal Intensive Care Unit (NICU), and Emergency Care Unit) were included in the convenience sample; there were 301 nurses overall.

**Study instrument :**

Data were gathered by two tools divided as following

The Socio-Demographic Data Sheet, which was part of the instrument, contained information on the age, gender, years of experience, education, department, and marital status of nurses.

**Tool (1): Working Hours Questionnaire**

It was created in 2000 by the Australian Council of Trade Unions (ACTU), and a researcher translated it into Arabic. There were 37 things total, categorized into 6 dimensions as follows: The initial dimension was scheduling, which had 11 items: two multiple-choice questions, five yes-or-no questions, and four three-point Likert scale questions that ranged from "never=0" to "frequently=2." Nine items, including four questions with a three-point Likert scale ranging from never=0 to frequently=2, and five multiple-choice questions, made up the second dimension, which was hours of work. The third dimension was work load, and it took the form of two questions: one with a Likert scale (never = 0 to regularly = 2) and another with a yes/no/don't know response. The fourth dimension, which included three items—two yes-or-no questions and one multiple-choice question—was traveling to and from work. The fifth component, weariness, has six items: four questions with a Likert scale ranging from never = 0 to regularly = 2, and two questions with the options no, occasionally, and yes. The six dimensions were family and social life; there were five questions with a three-point Likert scale (never = 0 to frequently = 2) and one question with a yes/no response.

**Tool (2) Occupational Health Hazards Questionnaire:**

Keorekile (2015) created this instrument, which the researcher translated into Arabic. It is separated into three dimensions and consists of 29 items: The first dimension was The 16 components that made up the hazards were divided into the following four subdimensions: The four items under Physical Hazards were three yes-or-no questions, one multiple-choice question, and one item. The six elements on the biological hazards test included two multiple-choice questions and four yes-or-no questions. Chemical dangers; there were two questions with a yes/no response option. Psycho-social dangers; it included four items, including two multiple-choice questions and two yes/no questions. The second dimension, which focused on organic and inorganic illnesses, included the following eight items: There were two questions about organic disorders: one was multiple-choice, and the other was a yes-or-no question. The six questions on inorganic disorders included four multiple-choice questions and two yes/no questions. The third factor was nurses' adherence to established procedures designed to manage occupational health risks. It consists of five questions with yes/no responses.

**Tool validity:** Five nursing administration specialists served as a jury, and each panel was asked to review the instruments for content validity, coverage, clarity, phrasing, length, format, applicability, and overall appearance. The necessary change was made.

**Tool reliability:** To verify the tools' consistency, reliability tests were conducted. To determine the degree to which the tool's items measured what they were supposed to measure, the internal consistency was assessed. Additionally, the reliability of the tools was assessed using the Cronbach alpha test, which yielded results of 0.79 for the working hours questionnaire and 0.87 for the occupational health hazards questionnaire.

**Pilot study:** Prior to beginning fieldwork, a pilot study was carried out on 10% of staff nurses (nurse = 30) of the total study subjects to assess the usefulness and comprehensibility of the items in the instruments. The tools were appropriate, didn't require any modifications, and were included in the final results. The estimated time needed to fill them out ranged from 30 to 40 minutes. The total number of study participants did not include the pilot study participants. The participants were told that their involvement in the study was entirely optional, that there would be no consequences if they chose not to participate, and that they could withdraw at any point while the study was being conducted. Beginning in early June and end at August 2024, data was gathered.

#### **Ethical consideration:**

The study participants were free to decline participation or leave the study at any moment, for any reason. The privacy of the research participants was taken into account when gathering data. Participants received guarantees that all of their information would be kept completely private. To further protect their privacy, each staff nurse was given a number rather than their name.

#### **Statistical analysis:**

Using the SPSS version (28), the gathered data were tallied, processed, examined, and condensed using descriptive statistical tests to test research questions. Frequencies and percentages were used to express the qualitative data. The degree of significance is indicated by the probability (P-value); a value of less than 0.05 was deemed significant. The Pearson coefficient is used to express the spearman correlation coefficient ( $\rho$ ). The value of the coefficient shows the strength of the relationship as follows, while the sign of the coefficient indicates the type of relationship (positive or negative): Those with values below 0.25 have weak correlation, those with values between 0.25 and 0.74 have moderate correlation, and those with values between 0.75 and 0.75 have strong correlation.

#### **Result:**

According to Table 1, the majority of staff nurses (72.4%) are female and range in age from 21 to 30 years, with a mean age of  $25.16 \pm 4.364$ . In addition, 64.1% of them are married. In terms of education, it shows that 53.2% of staff nurses hold a degree from a technical institute. A mean score of  $7.16 \pm 1.454$  indicates that 74.8 percent of them have years of experience ranging from 1:10 years. Furthermore, 37.2% of them work in dialysis facilities.

**Table (1) Distribution of the staff nurses socio demographic data (no.= 300).**

Characteristics Staff nurses	(no.)	(%)
Age		
1-20yrs	14	4.7
21-30yrs	218	72.4
31-40yrs	43	14.3
41-50yrs	23	7.6
>51yrs	3	1.0
Mean $\pm$ SD	28.16 $\pm$ 3.364	
Gender		
Male	77	25.6
Female	224	74.4
Marital status		

Single	93	30.9
Married	193	64.1
Divorce	15	5.0
Education levels		
Diploma	69	22.9
Technical institute	160	53.2
Bachelor	72	23.9
Years of experience		
1-10yrs	53	17.6
11-20yrs	225	74.8
21.50yrs	23	7.8
Mean $\pm$ SD 7.16 $\pm$ 1.454		
Department		
ICU	57	18.9
Dialysis unit	112	37.2
NICU	82	27.2
Emergency room	50	16.6

Table 2 shows that 51.2% of staff nurses work 50 hours or more per week, 36.2% work unlimited paid overtime, 41.9% work paid overtime because of a lack of staff, 54.2% work unlimited unpaid overtime, and 54.2% work unpaid overtime because of a lack of staff and excessive workload.

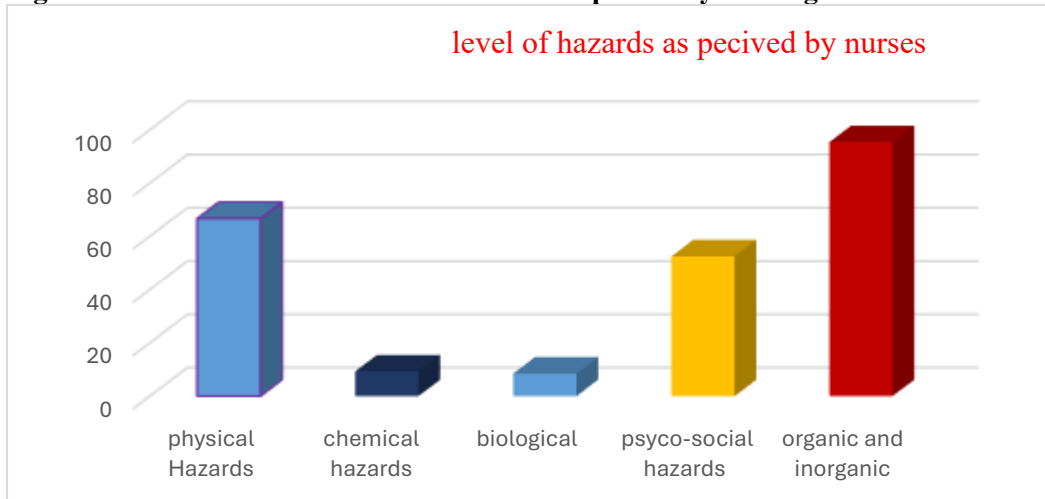
**Table (3) Distribution of the staff nurses related to their working hours (no.= 300).**

<b>5-What are your total working hours each week? (averaged over 4 weeks)</b>	<b>No</b>	<b>%</b>
<input type="checkbox"/> 20 - 29	4	1.3
<input type="checkbox"/> 30 - 34	19	6.2
<input type="checkbox"/> 35 - 39	33	11
<input type="checkbox"/> 40 - 44	42	14
<input type="checkbox"/> 45 - 49	49	16.3
<input type="checkbox"/> >50	154	51.2
<b>6-How many hours of paid overtime do you work each week? (averaged over 4 weeks)</b>		
<input type="checkbox"/> Less than 2 hours	8	2.7
<input type="checkbox"/> 2 - 5 hours	13	4.3
<input type="checkbox"/> 6 - 10 hours	24	8
<input type="checkbox"/> 11 - 15 hours	88	29.2
<input type="checkbox"/> More than 15 hours	59	19.6
<input type="checkbox"/> Not limited	109	36.2
<b>7-Why do you work paid overtime? (tick all that apply)#</b>		
<input type="checkbox"/> Need the money	24	8
<input type="checkbox"/> Employer makes me	64	21.3
<input type="checkbox"/> Too much work	105	34.9
<input type="checkbox"/> Must to keep the job	50	16.6
<input type="checkbox"/> Not enough staff	126	41.9
<input type="checkbox"/> Part of roster	17	5.6
<b>8-How many unpaid hours do you work in a week? (averaged over 4 weeks)</b>		
<input type="checkbox"/> Less than 2 hours	66	21.9
<input type="checkbox"/> 2 - 5 hours	25	8.3
<input type="checkbox"/> 6 - 10 hours	13	4.3
<input type="checkbox"/> 11 - 15 hours	10	3.3
<input type="checkbox"/> More than 15 hours	24	8
<input type="checkbox"/> Not limited	163	54.2
<b>9-Why do you work unpaid hours? (tick all that apply)#</b>		

<input type="checkbox"/> Employer makes me	40	13.3
<input type="checkbox"/> Too much work	163	54.2
<input type="checkbox"/> Must to keep job	42	14
<input type="checkbox"/> Not enough staff	163	54.2

**Figure (1)** illustrates that (66.7%) of the staff nurses are high exposure to physical hazards, (95.3%) of the staff nurses are high exposure to organic and inorganic disorders, while (9.3%) of them are high exposure to chemical hazards.

**Figure 1** the distribution of different hazard exposure by nursing staff



**Table (4)**Correlation matrix between the staff nurse's working hours and occupational health hazards (no.= 301).

Variable	The number of working hours you work each week	The number of overtime hours you work each week	Total occupational health hazards
The number of working hours you work each week	1		
The number of overtime hours you work each week	0.897** (0.005)		
Total occupational health hazards	.342* (0.004)	.051 (0.078)	1

**Table (4)** explains that there are positive correlations between health hazards and (the number of working hours you work each week as well as the number of overtime hours you work each week).

### Discussion :

Nurses play a vital role in the healthcare system. In the majority of healthcare settings, they are primarily in charge of a sizable amount of patient care and are an essential component of clinical services. In the course of their daily work in healthcare environments, nurses are vulnerable to occupational hazards. Nursing is a particularly dangerous profession due to the nature of the work environment, activities, and obligations involved. Nurses and other healthcare professionals are at the forefront of many occupational risks and are particularly susceptible to occupational health hazards at work. There are many different kinds of health risks associated with the nursing profession. Although some have been around since the beginning of the nursing profession, they have only lately received the attention they deserve. Other health risks are novel, mostly as a result of the healthcare industry's recent explosive growth. Physical, psychological, and social hazards are the three categories into which occupational

health risks for nurses can be conveniently divided. The different risks are not presented in the following paragraphs in a manner that corresponds to their proportional importance (Di Prinzio et al., 2023).

The study's findings on staff nurses' working hours revealed that over half of them put in fifty or more hours per week, while over thirty-three percent worked no capped number of hours of paid overtime and over fifty percent worked no capped number of hours of unpaid overtime. Due to an overwhelming workload and a staffing deficit, the staff nurses may be working both paid and unpaid overtime in order to save their jobs. This was in line with Ottman et al. (2022), who stated that nurses perform a variety of tasks throughout nursing shifts, such as patient care and condition education in addition to patient admission, transfer, and discharge. At the same time, a major global health problem that is unlikely to get better very soon is the shortage of nurses. increased burden as a result of both paid and unpaid overtime and the nursing shortage.

Furthermore, the results of the current study showed that one-third of staff nurses have limited exposure to physical dangers, but over two-thirds have excessive exposure. This can be because of the heavy workload for nurses, which can result in headaches, backaches, and sleep deprivation, all of which raise the physical risks for staff nurses. Furthermore, the results of the current study showed that one-third of staff nurses have limited exposure to physical dangers, but over two-thirds have excessive exposure. This can be because of the heavy workload for nurses, which can result in headaches, backaches, and sleep deprivation, all of which raise the physical risks for staff nurses.

Additionally, the study shows that while a small percentage of staff nurses had high exposure to chemical risks, the majority had modest exposure. This might be because some nurses work in departments with little exposure to mercury, solvents, and anesthetic gases, which reduces exposure to chemical risks. This could also be because not all nurses are at risk of exposure to chemical hazards. However, the majority of them worked in hospitals' critical and general units, far from any chemicals. Varshavsky et al. (2023) provided support for this, concluding that while the majority of staff nurses had low exposure to chemicals that are harmful or irritating to bodily systems, such as drugs, solvents, and gases (such as ethylene oxide and anesthetic gas wastes), the minority had high exposure to chemical hazards.

Additionally, the current study found that most staff nurses had low exposure to biological hazards, while a small percentage had high exposure. This could be because nurses who worked with infected patients took precautions to avoid contracting the infection from the patients, and they also treated all patients as contagious individuals, so they took the preventive measures when deal with the all patients. Healthcare workers are exposed to blood-borne infections, which typically expose them to diseases like HIV, TB, and hepatitis B and hepatitis C. This was in contrast to Khoshakhlagh et al. (2023), who summarized this. Significant morbidity and death among these workers will unavoidably result in the loss of qualified staff and have a negative effect on healthcare services, which are already under pressure in many low- and middle-income nations. Furthermore, this result contradicts that of Bin-Ghouth et al. (2021), who found that 39.5% of staff nurses were exposed to biological risks.

In terms of staff nurses' exposure to psycho-social hazards, the current study found that over half of them had high exposure to these hazards, while less than half had low exposure. This was because the nurses worked in stressful and critical areas and had to use clinical judgment, which all contributed to their emotional exhaustion, anxiety, depression, and increased stress. This was in line with Izadi and Piruznia (2018), who stated that psychosocial hazards are elements and circumstances related to job duties or workplaces that raise the possibility of stress, emotional strain, or interpersonal issues. Additionally, the result backed by Zeinab I., et al 2020.

Furthermore, the study found that while a minority of staff nurses had low exposure to organic and inorganic disorders, the majority had high exposure. This was because the workload of nurses led to stress, emotional disturbances, and sleep deprivation, all of which increased the number of organic and inorganic disorders among staff nurses. Additionally, the nursing staff is at high risk for both organic and nonorganic diseases like asthma and respiratory infections due to their work with infectious diseases and exposure to dust and droplets. This is in line with Rapisarda et al. (2019), who claimed that injuries from falls, needle pricks, coming into contact with patient bodily fluids that are infectious, moving large patients and objects, and extended standing due to work demands are all examples of occupational



health hazards. Furthermore, an occupational health hazard is a hazardous material, human behavior, or occurrence that has the potential to result in fatalities, serious injuries, or other negative health effects at work. Additionally, the results align with those of Ali et al. (2022), who found that the majority of nurses on staff have a high exposure to both organic and inorganic illnesses.

Furthermore, the actual study found that while a small percentage of staff nurses had low exposure to overall occupational health hazards, the majority had significant exposure to them. This may be because of the inherent conditions of the nursing profession, which cause the majority of nurses to experience various health risks that impair their efficacy and productivity. This was consistent with Denge (2021), who clarified that health professionals are holistic individuals with physical, emotional, social, mental, and psychological components that may be impacted by risks. The promotion and preservation of the highest level of physical, mental, psychological, and social welfare for employees in any particular organization is the goal of occupational safety and health. This was in line with Ferri et al. (2016), who claimed that shift work—and night shifts in particular—is one of the most common causes of circadian rhythm disruption, leading to notable changes in sleep and biological processes. These changes can then have an adverse effect on one's physical and mental health as well as impair one's ability to perform at work. Numerous studies have also examined the effects of shift work on employees' physical health.

### Conclusion

This study found that over two thirds of staff nurses had high exposure to physical hazards, while one third had low exposure to physical hazards. Additionally, whereas the minority of staff nurses had substantial exposure to biological dangers, the majority had modest exposure. Additionally, this study revealed that the majority of staff nurses had high exposure to both organic and inorganic problems, and that over half had high exposure to psychosocial hazards, while fewer than half had low exposure to psychosocial hazards. Clear and precise job descriptions, flexible work arrangements, equitable treatment, and frequent meetings between managers and staff nurses to address any issues and resolve any hazardous hazards. The hospital administration implemented occupational health and safety policies and initiatives for healthcare personnel. It is necessary to create policies that lessen the stress caused by working shifts. These can include lowering the length of the night shift, lengthening the breaks in between shifts, setting up sufficient lunch times, and allocating weekend and holiday labor equitably.

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