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ASSOCIATION BETWEEN WORKING ENVIRONMENT OF HOSPITAL AND NURSE'S PERFORMANCE AT LIAQUAT UNIVERSITY HOSPITAL

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Abstract

Background: *The work environment in hospitals plays a crucial role in influencing nurses' job performance, quality of care, and patient outcomes. Supportive environments promote higher motivation and productivity, whereas unfavorable environments contribute to stress, burnout, and decreased performance. Limited research in Pakistan has explored this association in tertiary care hospital settings.*

Aim of the Study: *To assess the association between the working environment and nurses performance at a tertiary level care hospital.*

Methodology: *A cross-sectional descriptive study was conducted among 165 nurses at Liaquat University Hospital. Data was collected through a structured questionnaire comprising three parts: (i) demographic information, (ii) Practice Environment Scale of the Nursing Work Index (PES-NWI), and (iii) Shortened Job Performance Scale (SJPS). Data were analyzed using SPSS version 26. Descriptive statistics were applied for demographic variables, while Chi-square test and Spearman's correlation were used to determine the association between the nurse work environment and job performance.*

Results: *Among 165 participants, the majority (62.4%) perceived their work environment as favorable, while 24.8% reported it as unfavorable. Regarding job performance, 46.1% demonstrated high performance, 40.0% moderate, and 13.9% low performance. A significant association was found between the work environment and nurse job performance ($\chi^2 = 51.811$, $p < 0.001$). Furthermore, Spearman's correlation revealed a strong positive relationship between the work environment and job performance ($r = 0.731$, $p < 0.001$).*

Conclusion: *The study highlights that a favorable nursing work environment significantly enhances nurse job performance. Hospital administrators and policymakers should focus on strengthening staffing, leadership support, and Interprofessional collaboration to improve nursing outcomes and patient care quality.*

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INTRODUCTION

The working environment in healthcare settings has a significant impact on nurses' performance, job satisfaction, and mental health, particularly in tertiary care facilities where patient requirements are more complex and acute. Significant expectations are placed on staff nurses in tertiary hospitals since they frequently handle severe cases that necessitate for specialized care and ongoing decision-making. With the increasing number of patients and staffing shortages putting pressure on healthcare systems around the world to provide high-quality treatment, the workplace's impact on nurse performance has grown in significance[1]. Nurses need a work environment that makes them use the full expression of their skills and knowledge[2].Job performance is one of the major concerns for administrators and researchers in the nursing setting due to said job performance positive effect on work life, service, and care quality for health organizations[3]. It is a common experience in almost every health and performance of health professionals that form an important variable in the healthcare work environment[4].A better workplace has appropriate safety standards to offer job satisfaction to the nurses and lower burnout levels during patient care delivery[5]. In previous studies, burnout was examined primarily as an unidirectional phenomenon, wherein the emotional dimensions of the Maslach Burnout Inventory (MBI) were primarily taken into consideration[6].Though the MBI is the most popular instrument in assessing occupational burnout, it has often been criticized for its conceptual, practical, and psychometric inadequacies[7].It is the attribute of a healthy working environment which empowers the nursing profession to optimize its capability for patient centered care affecting both patient outcomes as well as the image of the health care system.[8] Heavy workloads understaffed working conditions and inadequate managerial support have vastly impaired the performance of nurses despite the fact that they are widely acknowledged as critical to health care especially within tertiary care hospitals[9].

Worldwide, recent research has indicated that a poor work environment results in enhanced stress, job dissatisfaction, and high turnover among nurses, eventually compromising patient safety and the quality of care[10]. In low and middle-income nations such as Pakistan, problems associated with the nursing work environment are far worse. Pakistan Nursing Council and local health reports suggest that the nation still lags behind in nurse-to-patient ratio as per World Health Organization standards[11]. Public sector tertiary care hospitals, especially, face excess patient loads, lack of resources, and poor administrative and management backup, leading to a tense working environment for nurses[12, 13].

A recent research study carried out at a Pakistani teaching hospital reaffirmed that inadequate staffing levels and high workload are among the worst rated in patient safety culture despite other domains being rated higher[9]. With that there is practical evidence connecting workplace bullying to certain consequences of poor mental and physical health in relation to the nursing profession, job dissatisfaction, low-performance level, and increased intent to leave the current job or the nursing profession altogether [14]. These chronic problems lead to burnout and stress among nurses and interfere with their capacity to uphold high levels of patient there in Liaquat University Hospital Hyderabad and Jamshoro two of the largest public tertiary care hospitals in Sindh, nurses often handle complicated patient cases with minimal assistance and resources, knowing and enhancing the work environment in such institutions is thus utmost importance to facilitating improved nurse performance enhanced job satisfaction and quality and safe patient care.

Multiple recent studies from various provinces of Pakistan have highlighted similar concerns. A study in Lahore found that nurses in government hospitals reported dissatisfaction with their working environment, citing high workload, inadequate supplies, and lack of administrative appreciation as primary stressors[15]. Another cross-sectional study conducted in Peshawar revealed that only 42% of nurses rated their work environment as satisfactory, with leadership support and staffing adequacy being the most poorly rated domains[16]. Similarly, nurses in public sector hospitals of Karachi expressed concerns regarding unsafe staffing levels, lack of involvement in decision-making, and poor Interprofessional communication[17].

In Sindh specifically, research shows that nurses working in public tertiary hospitals are prone to emotional fatigue due to long shifts, limited professional recognition, and the absence of

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structured performance feedback systems. These contextual factors not only affect the motivation and efficiency of nursing professionals but also negatively impact the quality of patient care and hospital safety culture[18].

The public health system in Pakistan is marred by many challenges to provide a work friendly environment for nurses within tertiary care hospitals like Liaquat University Hospital in Hyderabad and Jamshoro. The hospitals have large patient populations with complicated health needs, but they are usually provided with minimal resources inadequate staffing. Recent research in Khyber Pakhtunkhwa and other provinces has demonstrated that nurses and tertiary public sector hospitals repeatedly report poor working conditions, marked by persistent understaffing inadequate equipment, and a lack of administrative support. ICU nurses have high stress levels due to continuous exposure to difficult professional situations, confrontations, overload, emotional stress, and psychological issues arising from caring for terminally ill patients [19]. This not only jeopardizes nurse's capacity to deliver safe and effective patient care but also fuels turnover and burnout[12, 13]. As a results of these ongoing issues, nurses who work in some settings often have too much work pressure, long working hours, and stressful interactions with superiors and coworkers[13]. This stressor have been associated with decreases job satisfaction, poor task performance and decreased quality of care provided to patients. in addition, the existence of a positive work environment is a key factor in enhancing nurse's performance and outcomes has been reported in numerous studies globally[9].however context specific data from Pakistan is limited local studies have touched upon the issues of the work environment on nurse's job performance within Pakistan's public tertiary care hospitals, including Sindh's has yet to be conducted[9, 12].filling this gap is instrumental in formulating evidence based strategies to improve nurses 'working conditions, enhance performance, and ultimately bolster patient care services within Pakistan's healthcare system.

Problem Statement

Most of the tertiary care hospitals in Pakistan face serious challenges, such as the shortage of staff, increased workloads, and insufficient managerial support,[12]even though the importance of all these factors constituting a conducive environment for nurses has been internally acknowledged. All these affect the job performance of nurses and, thus, the quality of patient care. Therefore, the literature very scarcely examines this relationship with reference to public tertiary hospitals in Pakistan. This study, thus, attempts to address this concern for strategies to aid nursing practice and patient outcomes.

Rationale of Study

An effective and well-structured working environment is important for ensuring nurses are able to perform their tasks effectively and provide quality patient care in Pakistan, especially in public tertiary care hospitals, the frequent problems of staffing shortages, scarce resources, and excessive workloads still undermine nurses' work satisfaction and productivity. While International Studies have proven the role of the work environment in influencing the job performance of nurses and patient safety there is a glaring absence of context specific in-depth research in Pakistan particularly in key public sector institutions such as Liaquat University Hospital in Hyderabad and Jamshoro it will yield context specific evidence about the connection between hospital work environment and nurses' job performance the results can inform hospital administrators policymakers and nursing executives to develop realistic strategies to enhance the work environment promote nurses' job satisfaction, and ultimately provide safer, more effective patient care.

Aim of the Study

The aim of this study is to investigate the relationship between the working environment of a hospital and the job performance of nurses in a tertiary care hospital.

Objectives of Study

General Objective

To examine the correlation between the working environment and the performance of nurses in a tertiary care hospital.

Specific Objectives

To assess the overall working environment as perceived by nurses in a tertiary care hospital.

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To examine the association between key workplace factors and nurses' job performance.

Hypothesis of the Study

- H_1: There is a relationship between the working environment of hospital and nurses' job performance.
- H_0. There is no relationship between the working environment of hospital and nurses' job performance.

Significance of Study

The evidence in this study will demonstrate how specific aspects of the working environment deal with nurses' task performance contextually. The findings will thus help hospital administrators and policymakers identify key areas requiring improvement toward the development of a supportive workplace. By enhancing the work environment, job satisfaction will be increased, burnout will decrease, and therefore, the quality and safety of patient care in tertiary care hospitals in Pakistan will be improved.

Theoretical Framework

This study has two complementary models to explain the relationship between the working environment in the hospital and nurses' job performance: Donabedian's Structure-Process-Outcome (SPO) Model and Patricia Benner's Novice to Expert Theory.

Donabedian's Structure–Process–Outcome Model:

While Donabedian's (SPO) model is not a traditional nursing theory, it is a widely recognized framework in healthcare quality research. It provides a logical structure for analyzing how healthcare systems affect clinical outcomes. In this study, it is used as a **theoretical lens** to explore how organizational factors like staffing and leadership (structure) influence nurses' activities (process) and, ultimately, their job performance (outcome)Originally developed for assessing healthcare quality, Donabedian's model provides a system-level framework. It divides care quality into three interconnected components:

Structure: The setting in which care occurs, including physical resources, staffing, leadership, and organizational policies.

Process: The actual delivery of nursing care, clinical decision-making and professional interactions.

Outcome: The resulting effects on nurse performance, patient safety, satisfaction, and quality of care.

In this study, the work environment is viewed as the "structure," nurses' job performance as the "process," and patient care quality as the "outcome." The model supports the hypothesis that an improved hospital structure leads to better processes and, ultimately, better care outcomes.

Patricia Benner's Novice to Expert Theory:

Benner's theory describes how nurses acquire clinical knowledge and competence over time through education, experience, and situational exposure. She identifies five levels of nursing proficiency: novice, advanced beginner, competent, proficient, and expert.

The current study incorporates the Structure-Process-Outcome (SPO) Model suggested by Donabedian's and the Novice-to-Expert Theory once proposed by Patricia Benner in order to examine the influence of the environment in a hospital on the performance of nurses. Based on the model by Donabedian's, the question puts into the focus the impact of structural determinants such as staffing, material resources, and leadership on the process of delivering care and further outcomes. This focus ties well with the goal of the research study to establish a relationship between environmental factors and work performance. At the same time, the framework introduced by Benner represents the levels of competence in nurses as a continuum between a novice and expert relative to the experience obtained in the workplace, which also highlights the aspect of support in workspaces and the construction of the expertise and professional growth. Conjointly, the theories will help the investigation look at both the organization systems and personal growth, thus taking a broad approach to studying the performance in public tertiary hospitals. Such a two-pronged approach is particularly relevant in the Pakistani context, in which limited resources often pose a challenge to workplace experiences and in which the extent of performance variance is generally high.

By combining Donabedian's system-wide perspective with Benner's performance-level focus, the study captures both **organizational factors** and **individual nurse development**. This dual-theory approach

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ensures a more holistic understanding of how the hospital environment affects nurses' job performance in public tertiary care settings.

METHODOLOGY

Study Design

A descriptive cross-sectional design was used in this study.

Study Setting

The study was conducted at Liaquat University Hospital, Hyderabad and Jamshoro, a tertiary care government facility with diverse departments. Its complex environment made it an appropriate setting to examine the impact of work conditions on nurse performance.

Study Duration

The study was conducted over six months following approval from the Ethical Review Committee, allowing adequate time for data collection across shifts and departments to capture diverse nursing experiences and ensure an appropriate sample size.

Study Population

The population included registered nurses at Liaquat University Hospital with ≥6 months' experience in direct patient care.

Sample Size

Out of 188 registered nurses at Liaquat University Hospital, 165 were included based on availability and consent. This sample size ensured adequate statistical power and generalizability, aligning with calculations at a 95% confidence level. Only nurses meeting inclusion criteria were considered in accordance with ethical standards.

Sampling Technique

Purposive sampling was used to select nurses with at least six months of experience, ensuring participants were actively engaged in patient care and familiar with the hospital environment. This approach aligned the sample with the study objectives by including those most able to provide reliable insights.

Selection Criteria

Inclusion Criteria

1. Registered nurses with more than six months of experience in direct patient care at Liaquat University Hospital Hyderabad/Jamshoro
2. Nurses who were actively working at the hospital during the period of data collection.
3. Both Male and female nurses were included to ensure gender diversity.
4. Nurses who were willing to voluntarily participate in the study and provide informed consent.

Exclusion Criteria

1. Nurses with less than six months of experience in direct patient care at Liaquat University Hospital Hyderabad /Jamshoro.
2. Nursing management professionals, such as nursing superintendents, shift supervisors, and head nurses, who do not directly provide patient care.
3. Other medical practitioners such as doctors and allied health care professionals who are not part of the nursing staff.
4. Nurses who do not provide informed consent to participate in the study.

Data Collection Procedure

Data collection began after Ethical Review Committee approval, with informed consent obtained from participants. Nurses were individually approached during working hours and provided self-administered questionnaires, with the researcher available for clarification.

Data Collection Tools

Data were collected using the Adapted Practice Environment Scale (PES-NWI) and the Shortened Job Performance Scale (SJPS). The PES-NWI assessed staffing, leadership, and teamwork, while the SJPS measured task and contextual performance. Both tools are validated, reliable, and aligned with the study objectives.

Data Analysis

Data were analyzed using SPSS v26. Descriptive statistics summarized participant demographics, while the Nursing Work Environment Index and Shortened Job Performance Scale were categorized into defined levels. Correlation and Chi-square tests were conducted to examine relationships and associations between work environment factors and nurse performance

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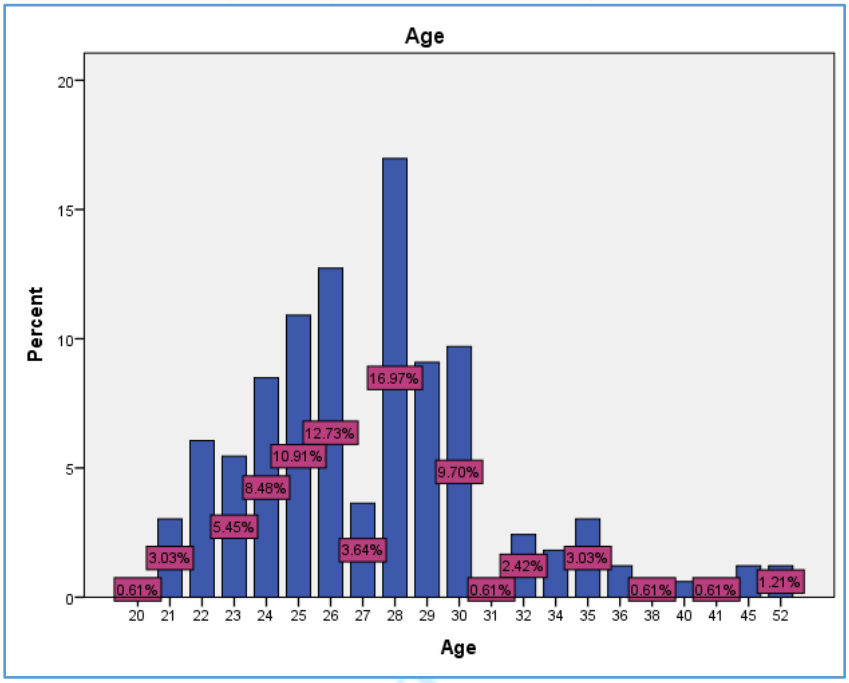
Ethical Considerations

Ethical approval was obtained from the Research Ethics Committee (REC) of LUMHS, Jamshoro, and permissions from the Director of Peoples Nursing School and Medical Superintendent of LUMHS, Hyderabad/Jamshoro. Informed written consent was obtained from participants, ensuring voluntary participation and confidentiality. All data were used solely for research purposes, maintained securely, and the study adhered to REC and institutional research protocols.

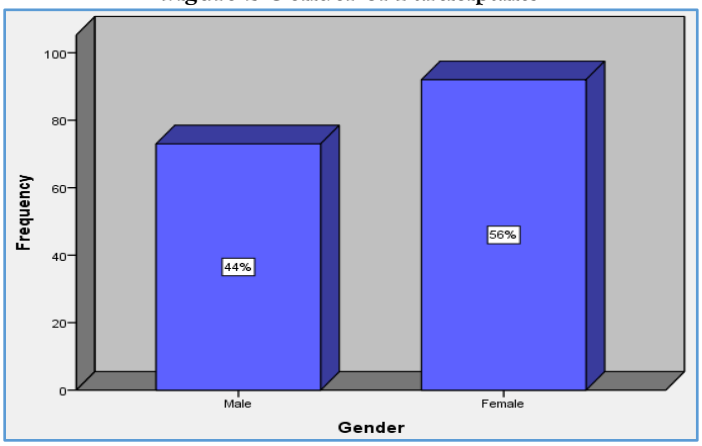
RESULTS

Figure 1 Age of Research Participants



The age distribution of the study participants shows a concentration mainly between 22 and 30 years. The most frequent age was 28 years, representing **16.97**% of the sample. Other notable age groups include 26 years (**12.73**%), 25 years (**10.91**%), and 29 years (**9.70**%). Ages below 22 and above 35 years had comparatively fewer participants, with percentages mostly below 3%. The youngest participant was 20 years old (0.61%), and the oldest was 52 years old (1.21%). Overall, the sample predominantly consists of young adult nurses in their mid to late twenties.

Figure 2 Gender of Participants



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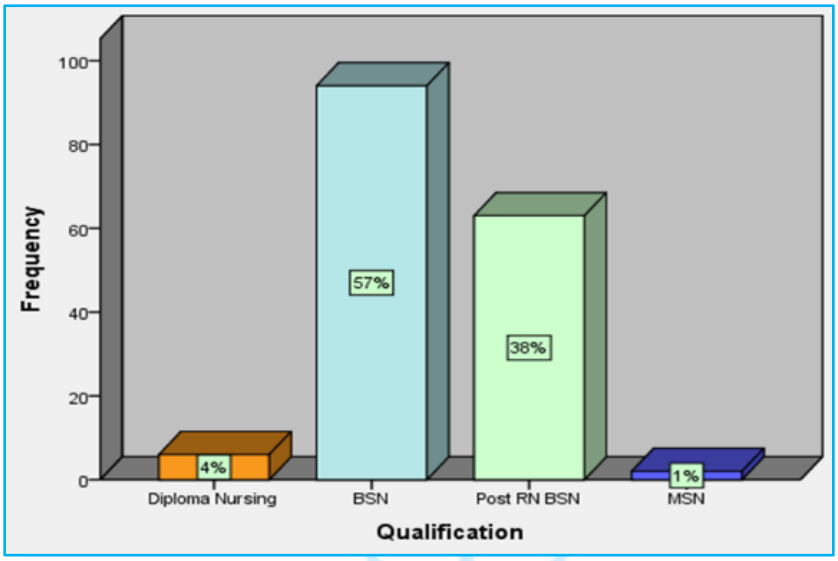
The bar chart represents the frequency distribution of participants by gender. The data indicates that there are more female participants than male participants in the sample. Specifically, females make up 56% of the total participants, while males account for 44%. This suggests a slightly higher representation of females compared to males in the studied population.

Figure 3 Qualification of the Participants



The results indicate in the figure 3 showed that the majority of participants (57%) held a Bachelor of Science in Nursing (BSN) Degree, moreover by 38% who had completed a Post RN BSN qualification.
A smaller proportion (4%) possessed a Diploma in Nursing, while only 1% had attained a Master of Science in Nursing (MSN) degree. This distribution highlights that most respondents had undergraduate nursing education, with relatively few holding postgraduate qualifications

Table 1 Clinical Placements of the participants

S/No	Clinical Placement	Frequency	Percentage
1	MICU	22	13.3
2	NICU	19	11.5
3	PEADS	16	9.7
4	SICU	13	7.9
5	OT	13	7.9
6	ER	12	7.3
7	SURGICAL	12	7.3
8	CCU	11	6.7
9	PICU	10	6.1
10	MEDICINE	10	6.1
11	GYNAE	6	3.6
12	ORTHO	5	3.0
13	BURN ICU	4	2.4
14	PULMO	3	1.8
15	UROLOGY	3	1.8
16	HDU	2	1.2

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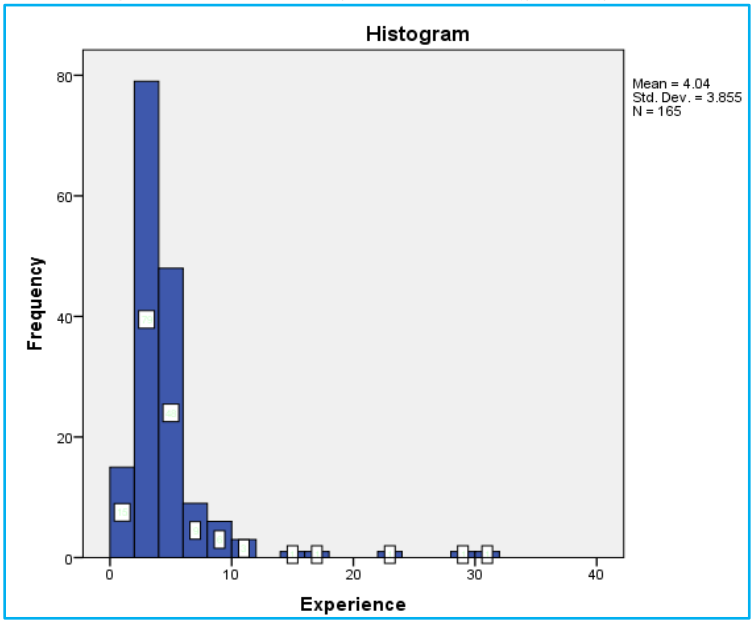
17	DIALYSIS	2	1.2
18	ENT	2	1.2
19	Total	165	100.0

The results show that the highest proportion of participants were placed in the Medical Intensive Care Unit (MICU) (13.3%), followed by the Neonatal Intensive Care Unit (NICU) (11.5%) and Pediatrics (9.7%). Other notable placements included the Surgical Intensive Care Unit (SICU) and Operating Theatre (OT), each accounting for 7.9% of participants. Moderate representation was observed in the Emergency Room (ER) and Surgical Ward (both 7.3%), Coronary Care Unit (CCU) (6.7%), and Pediatric Intensive Care Unit (PICU) (6.1%). Smaller proportions were placed in the Medicine Ward (6.1%), Gynecology (3.6%), Orthopedics (3.0%), Burn ICU (2.4%), Pulmonology and Urology (1.8% each), while the least representation was seen in the High Dependency Unit (HDU), Dialysis, and ENT, each with 1.2% of participants.

Figure 4: Clinical Experience of the participants



The histogram illustrates the distribution of participants' work experience. The mean experience was 4.04 years with a standard deviation of ±3.86 years, based on a total of 165 participants. The majority of respondents had less than 5 years of experience, with a sharp decline in frequency as experience increased. Only a small number of participants reported more than 15 years of experience, indicating that the study sample was predominantly composed of relatively early-career nurses.

Table 2 Test of Normality

Tools of the Study	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	statistic	df	Sig.
Nurse work environment index	.075	165	.023	.964	165	.000

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Shortened Job Performance scale	.065	165	.090	.988	165	.175

Df= degree of freedom

The Kolmogorov–Smirnov and Shapiro–Wilk tests were conducted to assess the normality of the study scales. For the Nurse Work Environment Index, the Kolmogorov–Smirnov test yielded a statistic of 0.075 ($p = 0.023$) and the Shapiro–Wilk test showed a statistic of 0.964 ($p < 0.001$), indicating a statistically significant deviation from normality. In contrast, for the Job Performance Scale, the Kolmogorov–Smirnov statistic was 0.065 ($p = 0.090$) and the Shapiro–Wilk statistic was 0.988 ($p = 0.175$), both of which were non-significant, suggesting that the data for this scale follow a normal distribution.

Table 3 Chi Square Test

Nurse Work Environment Index	Job Performance Scale			Total	Fisher Exact Value	P-Value
	Low Performance	Moderate Performance	High Performance			
Unfavorable Environment	14 (8.48)	16 (9.69)	11 (6.67)	41 (24.84)	51.811	.000
Moderate Environment	9 (5.45)	7 (4.24)	5 (3.03)	21(12.72)		
Favorable Environment	0 (0)	43 (26.06)	60 (36.37)	103 (62.43)		
Total Score	23 (14)	66 (40)	76 (46)	165 (100)		

The Chi-square test of independence was performed to examine the relationship between the Nurse Work Environment Index and Job Performance Scale among the study participants. The association was found to be statistically significant, χ^2 (4, N = 165) = 51.811, $p < 0.001$ (Fisher's Exact Test). Participants in a favorable work environment were more likely to demonstrate high job performance (60; 36.37%) compared to those in an unfavorable environment (11; 6.67%). Conversely, low performance was more frequently observed in participants from unfavorable work environments (14; 8.48%).

Table 4 Correlation Test

			Nurse work environment index	Job performance scale
Spearman's rho	Nurse work environment index	Correlation coefficient	1.000	0.731
		Sig. (2-tailed)		0.000
	Job Performance Scale	Correlation coefficient	0.731	1.000
		Sig. (2-tailed)	0.000	
	N		165	165

A Spearman's rank-order correlation was conducted to examine the relationship between the Nurse Work Environment Index and the Job Performance Scale among the study participants. The results demonstrated a strong, positive and statistically significant correlation between the two variables (ρ =

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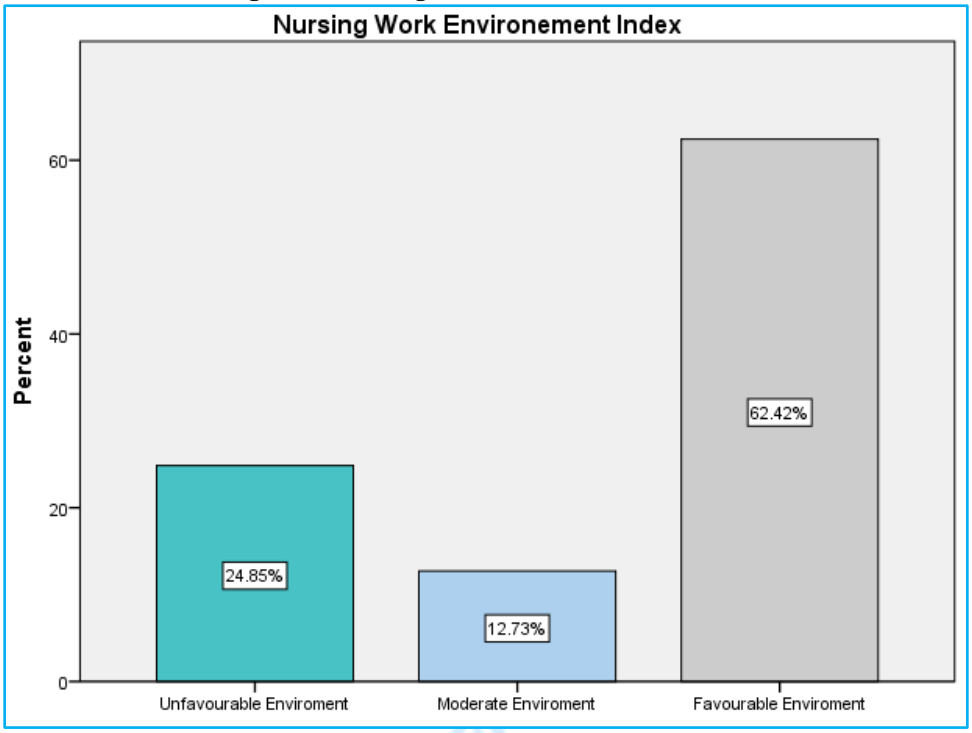
0.731, $p < 0.001$). This indicates that higher scores on the Nurse Work Environment Index, reflecting a more favorable work environment, are associated with higher job performance among nurses. All 165 participants were included in the analysis, and the significance value ($p < 0.001$) confirms that the observed correlation is unlikely to have occurred by chance. These findings suggest that improvements in the work environment may have a substantial positive impact on nurses' job performance.

Figure 5 Nursing Work Environment Index



The distribution of the Nursing Work Environment Index among the study participants is illustrated in the bar chart. The results indicate that a majority of nurses (62.42%) reported working in a favorable environment, while 24.85% of participants perceived their work environment as unfavorable. A smaller proportion of nurses (12.73%) reported a moderate work environment. These findings suggest that most nurses experience positive working conditions, but a notable portion still faces challenges associated with unfavorable or only moderately supportive work settings. This distribution provides important context for understanding subsequent analyses of nurse performance and work environment correlations.

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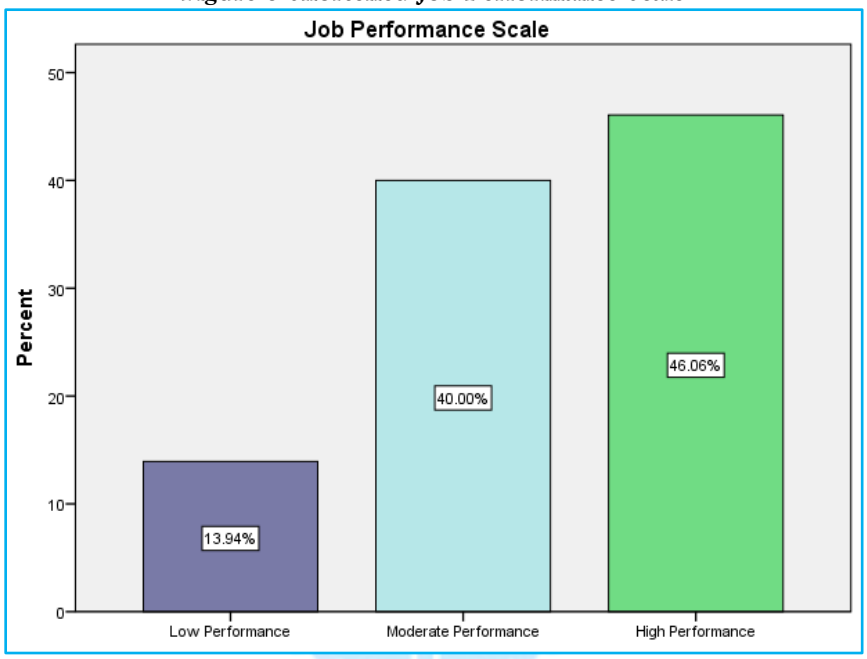
Figure 6 Shortened Job Performance Scale



This bar chart, titled "Job Performance Scale," illustrates the distribution of job performance levels based on a given scale. The x-axis represents three categories of job performance: Low Performance, Moderate Performance, and High Performance. The y-axis represents the "Percent" of individuals falling into each performance category.

The results indicate that the majority of individuals demonstrate High Performance, accounting for 46.06% of the total. Moderate Performance represents 40.00% of the individuals, while Low Performance constitutes the smallest group at 13.94%. These findings suggest a positive skew in job performance, with a significant proportion of individuals achieving high or moderate performance levels.

DISCUSSION

Discussion on Demographic Characteristics

In the present study figure 1 show, the age distribution of participants that was predominantly concentrated between 22 and 30 years, with the most frequent age being 28 years (16.97%), followed by 26 years (12.73%), 25 years (10.91%), and 29 years (9.70%). Ages below 22 and above 35 years were comparatively underrepresented, each comprising less than 3% of the sample. The youngest participant was 20 years old (0.61%), and the oldest was 52 years old (1.21%), indicating that the sample primarily consisted of young adult nurses in their mid to late twenties. This pattern is consistent with previous studies in Pakistan that have reported a predominance of nurses within the early stages of their careers, typically aged between 20 and 30 years[20]. The trend reflects the current workforce structure in the country, where nursing remains an emerging profession attracting younger entrants following the completion of formal education, and where retention beyond mid-career remains a challenge due to factors such as migration, family responsibilities, and alternative career opportunities[21]. International evidence also supports this finding, as studies in both developing and developed healthcare systems show that the majority of active nursing staff are under 35 years of age, owing to high recruitment of younger graduates and the physically demanding nature of the profession[22].

In the present study figure 2 indicates, female participants constituted 56% of the total sample, while males accounted for 44%. This reflects a more balanced gender representation compared to both national and international patterns, where nursing is

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historically a female dominated profession. Globally, women make up approximately 89–90% of the nursing workforce, and in many developed countries, including the United States and Canada, the male-to-female ratio is around 1:19 (23). In Pakistan, the disparity is even more pronounced, with the Pakistan Nursing Council allocating only 29% of nursing program seats to male students, leaving the remaining 71% for females (24). This allocation is reflected in the nursing workforce composition, where studies consistently report that males represent less than one-third of practicing nurses nationally[25]. The comparatively higher proportion of males in the current study may be attributed to several factors. Firstly, the sampling setting could have influenced representation, as tertiary-level teaching hospitals and urban healthcare facilities or specialty units often employ relatively more male nurses due to the diversity of patient care needs and cultural considerations. Secondly, certain nursing programs in Pakistan, such as Post-RN BSN tracks, may enforce gender quotas or actively recruit male candidates to diversify the workforce. Thirdly, broader global trends indicate a gradual increase in the proportion of male nurses[26].

Figure 3 carry on mirrors Pakistan's system-level transition toward degree-based entry into practice and the continued use of RN-to-BSN "bridging" pathways, which remain common in the workforce. Recent national literature notes the implementation of the four-year BSN and the formal move away from diploma routes, while studies from Karachi document the lived experiences of Post-RN BSN students, underscoring how upgrading from diploma to degree has been a key strategy for capacity building. The extremely small MSN proportion in our sample is also consistent with reports of limited postgraduate programme capacity and shortages of qualified nurse-educators, which constrain advancement beyond the undergraduate level. Overall, our qualification profile aligns with a workforce dominated by BSN-prepared nurse many upgrading from earlier training routes while advanced academic preparation remains comparatively rare in practice[27, 28].

Table 1 reveals a strong emphasis on critical care environments such as MICU, NICU, SICU, and ER highlighting the training focus on high-acuity areas that demand rapid, technically advanced response capabilities. Such exposure is consistent with global nursing education trends, where intensive care placements significantly enrich learning outcomes and clinical competency in complex and emotionally charged settings[29]. Contrastingly, placements in general wards or specialty units like Gynecology, Orthopedics, and ENT were relatively limited. This reflects a common pattern in nursing education globally, where placement opportunities are often weighted toward acute-care settings due to both educational priorities and workforce needs[30]. The low representation in HDU, Dialysis, and ENT may raise concerns regarding the breadth of clinical exposure. Reports in nursing education literature emphasize that breadth across specialties enhances adaptability and holistic care skills, suggesting that limited exposure in these areas could impact the development of well-rounded clinical competence[31].

In figure 4 findings of the study reveal that the mean work experience among participants was 4.04 ± 3.86 years, indicating that the sample was predominantly composed of early-career nurses. This trend aligns with observations in other South Asian contexts, where the nursing workforce tends to be relatively young due to high turnover, limited retention of senior staff, and continuous recruitment of recent graduates to meet hospital staffing demands. In contrast, studies in other regions report higher mean experience levels, such as 8.4 years in Oman^1 and 6.7 years in Malaysia^2, reflecting a more balanced mix of early-, mid-, and late-career nurses. The comparatively lower average in the present study may be attributable to factors such as migration of experienced nurses to high-income countries, preference for private sector employment among senior nurses, and the influx of newly qualified staff into tertiary care hospitals. These patterns have important implications for workforce stability, mentorship capacity, and overall institutional performance, as younger and less experienced nurses may require additional support and training to achieve optimal patient care outcomes[32].

Statistical Analysis of the Association between Nurse Work Environment and Job Performance

In table 2 Test of Normality indicates the normality assessment of the study variables revealed that, the Nurse Work Environment Index significantly

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deviated from a normal distribution, as indicated by the Kolmogorov–Smirnov ($p = 0.023$) and Shapiro–Wilk ($p < 0.001$) tests. In contrast, the Job Performance Scale demonstrated no significant deviation from normality in either the Kolmogorov–Smirnov ($p = 0.090$) or Shapiro–Wilk ($p = 0.175$) tests, suggesting that its data were approximately normally distributed. These findings are important when selecting appropriate statistical tests, as non-normal distributions may violate the assumptions of parametric methods, potentially leading to biased estimates and reduced statistical power. Although large samples can reduce the impact of non-normality on parametric tests due to the Central Limit Theorem, the use of non-parametric methods is generally recommended for variables with statistically significant deviations from normality[33].

In table 3 to asses association between nursing work environment and job performance was investigated by Chi Square test which shows the significant association between the Nurse Work Environment Index and Job Performance Scale ($\chi^2(4, N = 165) = 51.811$, $p < 0.001$) observed in this study underscores the critical role of the work environment in influencing nursing outcomes. Nurses operating in favorable work environments exhibited higher job performance (36.37%) compared to their counterparts in unfavorable settings (6.67%), aligning with findings from recent studies that highlight the positive impact of supportive work environments on nurse performance and job satisfaction(34). Conversely, the increased prevalence of low performance (8.48%) among nurses in unfavorable environments reflects the detrimental effects of inadequate resources, high workload, and poor organizational support on nursing efficacy[35]. These results are consistent with the Job Demands-Resources (JD-R) model, which posits that a balance between job demands and resources is essential for optimal employee performance[34]. Furthermore, the study's findings align with recent research indicating that professional development is the most significant factor influencing nurses' job performance, emphasizing the need for continuous education and training to enhance nursing capabilities. Collectively, these insights advocate for healthcare administrators to prioritize the enhancement of work environments through strategic interventions aimed at reducing job demands and bolstering resources, thereby fostering improved nurse performance and, ultimately, better patient care outcomes[36].

In table 4 Spearman's correlation analysis demonstrated a strong, positive, and statistically significant association between the Nurse Work Environment Index and the Job Performance Scale ($\rho = 0.731$, $p < 0.001$), indicating that nurses in more favorable work environments tend to exhibit higher levels of job performance. This finding aligns with recent research emphasizing that supportive work environments characterized by adequate staffing, professional autonomy, effective leadership, and opportunities for professional development directly enhance nurses' engagement, efficiency, and performance outcomes[34].Conversely, adverse work conditions, including high workload, insufficient resources, and limited organizational support, have been consistently associated with lower job performance, increased burnout, and job dissatisfaction[35]. The strength of the observed correlation underscores the critical impact of the work environment on nursing effectiveness and patient care quality, supporting the theoretical framework of the Job Demands-Resources model, which posits that the availability of sufficient job resources mitigates the impact of demands on employee performance. These evidences highlight the importance of organizational interventions targeting work environment improvements to optimize nurse performance and ultimately enhance patient outcomes[36].

NWEI Categories The distribution of the Nursing Work Environment Index among the study participants reveals that a majority of nurses (62.42%) perceive their work environment as favorable, while 24.85% report an unfavorable environment, and 12.73% describe it as moderate.

These findings suggest that while most nurses experience positive working conditions, a notable portion still faces challenges associated with less supportive work settings[37].

This distribution aligns with global studies indicating that favorable work environments are crucial for nurse satisfaction and retention. Hospitals with supportive work environments report lower nurse burnout and higher job satisfaction.

Leadership abilities of nurse managers significantly enhance nurses' perceptions of their work

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environment, leading to improved outcomes[38]. The presence of 12.73% of nurses in the moderate category indicates areas where improvements can be made to transition them into the favorable category. Interventions focusing on enhancing staffing adequacy, leadership support, and nurse participation in hospital affairs have been shown to improve work environment perceptions and nurse performance. In conclusion, while the majority of nurses report favorable work environments, the significant proportion experiencing unfavorable or moderate conditions necessitates targeted interventions. Addressing factors contributing to less supportive work settings can enhance nurse satisfaction and performance, ultimately improving patient care outcomes[39].

Interpretation of Findings through Theoretical Models

The findings of this study are well explained by Donabedian's Structure–Process–Outcome (SPO) model. The strong link between adequate staffing, supportive leadership, and nurse performance shows that the "structure" of an organization affects the "process" of nursing care, which then leads to better "outcomes." For example, wards with enough staff and managers who supported their teams had nurses with higher performance scores. This agrees with Donabedian's idea that good structures create better quality care.

The results can also be understood through Patricia Benner's Novice to Expert Theory. Younger nurses with less experience usually showed moderate performance, matching the novice or beginner levels in Benner's theory. In contrast, nurses with more years of experience performed at higher levels, reflecting the competent or proficient stages. This supports Benner's view that nursing skills and expertise improve gradually through practice and guidance.

Overall, these frameworks highlight that a positive work environment not only improves patient care at the system level but also supports the personal and professional growth of nurses over time.

CONCLUSION

The study reveals that a supportive and systematically organized work environment plays a fundamental role in enhancing nurses' performance. Environments that provide adequate resources, strong professional support, and opportunities for career development contribute to higher job satisfaction, improved performance, and overall workforce well-being. On the other hand, inadequately structured work environments can impede nurse's performance, highlighting the necessity for healthcare institutions to cultivate and maintain positive organizational conditions. Such measures are essential not only for optimizing staff outcomes but also for ensuring high-quality patient care and the overall effectiveness of healthcare delivery.

Generally, the study emphasizes that adopting supportive work environments is essential for improving nurse's performance, enhancing patient care quality, and promoting nurses satisfaction and retention.

RECOMMENDATIONS

- Conduct expanded research across multiple hospitals, including private, public, and international setups, to compare work environment and performance across diverse healthcare settings.
- Design intervention studies where targeted improvements (e.g., enhanced staffing, training programs, and mentorship initiatives) are implemented to measure their direct impact on nurse performance.
- Include qualitative methods such as interviews or focus groups to explore nurses' perceptions, experiences, and challenges regarding the work environment in more depth.
- Establish nursing education service's department similarly established in internationals hospitals for ongoing nurse education and training to improve skills, support, and overall performance.
- Hospitals should recruit postgraduate-qualified nurses, as their advanced expertise can enhance the work environment and care quality,
- Nurses should rotate through both general wards and specialty units to build diverse skills and well-rounded clinical competencies

STRENGTHS OF THE STUDY

- The study employed validated instruments the Nurse Work Environment Index and the Job

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Performance Scale ensuring the accuracy and reliability of the findings.

- Nurses from different departments and age groups were included, allowing for comprehensive understanding of the nurses' background and professional attributes.
- Multiple statistical methods were used, providing thorough understandings into the association between the work environment and nurse performance.
- The research identifies areas for further exploration, including intervention studies and multi-center research to enhance generalizability.

LIMITATIONS OF STUDY

- The study used a cross-sectional design, which only provides a snapshot of the work environment and nurse performance at one point in time, limiting the ability to observe changes or trends over time.
- The study relied on self-reported questionnaires, which may have affected the accuracy of responses due to social desirability or individual perceptions.
- The study was conducted in only one tertiary care hospital in, Sindh, which may limit the generalizability of the findings to other hospitals or regions.
- The study included a low proportion of experienced and postgraduate nurses, which may have affected the understanding of long-term workforce trends.

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Authors Contributions

This work was a collaborative effort by all authors.

The author ZA Conceptualize the study.

ZA conducted the data collection.

Data analysis and entered data in SPSS: ZA, SI, HBC & IAC

All authors read and approved the final version of the manuscript.

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