

The Relation between Work Environment, and Resilience among Nursing Staff at Zagazig University Hospitals

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Abstract

Background: The nursing profession is a challenging one, with nurses working under pressure all the time. The development of a healthy work environment and resilience skills is essential for nursing personnel to adapt to these obstacles and advance their careers. **Aim of the study:** Was to determine the relation between work environment and resilience among nursing staff at Zagazig University Hospitals. **Subject and methods: Research design:** A descriptive correlation research design was utilized in this study. **Setting:** This study was conducted at Zagazig University Hospitals. **Subjects:** stratified random sample of 375 nursing staff working at Zagazig University Hospitals. **Tools of data collection:** Two tools were used: the Practice Work Environment questionnaire and the Connor-Davidson Resilience Scale (CD-RISC). **Results:** 42.9% of nursing staff had a low perception level toward their nursing work environment, and more than half of them (59.5%) possessed a great degree of resilience in the workplace. **Conclusion:** A statistically significant positive connection was shown between nursing staff perception toward their work environment and their resilience. **Recommendations:** Implementing effective strategies by health care organizations to improve nursing staff perception about the nursing work environment to enhance resilience and better thriving at work.

Key words: Nursing staff, Resilience, Work environment.

Introduction

The global nursing shortage and high turnover rates are putting more strain on the nursing profession. The enormous workload that nurses must manage, when coupled with additional demands of their jobs, can have detrimental effects on their physical and mental well-being as well as the safety of their patients (Kohnen et al., 2024).

Nurses' working conditions are attracting attention and concern from around the world because it is increasingly widely agreed that finding ways to improve hospital working conditions is crucial for preserving proper staffing, providing high-quality patient care, encouraging nurses to work hard, and reducing attrition (Abdelmoez et al., 2023).

A nursing work environment is marked by organizational features that either support or undermine professional nursing practice. Nurses' involvement in hospital management, nursing's foundation for high-quality care, nursing administration skills, nursing leadership and

support, staffing and resource allocation, and the relationship between doctors and nurses are all aspects of the work environment. The quality of health services rendered can be predicted by these attributes (Boudreau and Rhéaume, 2024).

A supportive nursing work environment is linked to better patient outcomes, lower levels of job discontent, burnout, and intention to leave, and it draws highly educated nurses. Resilience reduces some of the unpleasant and difficult aspects of a practice environment and serves as a buffer to protect nurses from the damaging impacts of stress on their workplace (Ying et al., 2021). The ability to positively adjust to professional pressures, prevent psychological injury, and continue to deliver safe, high-quality patient care is known as nurse resilience. It also entails a process of recovery from hardship or stress and offers a chance for additional personal development and constructive adjustment (Cooper et al., 2020).

Resilience is important because it can improve proactive work behavior, justice and trust

in the organization, creative performance, job satisfaction, quality of care, retention of nurses, efforts to combat staff shortages, and the reduction of negative outcomes that can affect nurses, such as work-related stress, anxiety, depression, job insecurity, and intention to leave (Moloney, Fieldes & Jacobs., 2020).

Recovery and thriving are two of the primary resilience pathways. Recovery is defined as a return to baseline functioning following "diminished functional capacity" from the challenge or adversity, thriving, on the other hand, follows a healthy path from a challenge or adversity, whereby the nursing staff grows beyond their original baseline. Furthermore, organizational culture and better work environments are impacted by resilience, which enhances nurse retention and gives them the tools they need to survive and succeed at work (Rink et al., 2022).

Significance of the study:

Nursing Staff are facing unsustainable working conditions characterized by staff stressors, job burnout and intense workloads resulting in high turnover rates, staff nurses' feeling emotionally and physically exhausted and can't resilient in their work environment, which in turn hinder the efficient nursing care, adversely affect healthcare outcomes, and cause severe nursing shortage (Bartram et al., 2023). In addition, few studies in Egypt and Zagazig University cover the relation between work environment from nursing staff perspectives and their resilience. So, this study aimed to determine the relation between nursing work environment and nursing staff resilience at Zagazig University Hospitals-Egypt.

Aim of the study:

This study aimed to determine the relation between nursing work environment and resilience among nursing staff at Zagazig university hospitals.

Research Questions:

- What is the perception level of work environment among nursing staff?
- What is the level of resilience among nursing Staff?
- Is there a relationship between nursing work environment and resilience among nursing staff?

Subjects and methods:

Research design

A descriptive correlational research design was used to achieve the aim of this study.

Study setting:

The study was conducted at Zagazig University Hospitals, (academic hospitals), Egypt, which include two sectors involving eight teaching hospitals. The total bed capacity of the hospitals is approximately (1738 beds and 16 incubations).

Study subjects:

The overall count of nurses employed by Zagazig University Hospitals consisted of 2770 nursing staff during the time of the study. To be included in the study sample, the inclusion criteria set were:

- The available three categories of nurses will be included (bachelor & technical nurses & diploma).
- Both genders.
- Had at least one year of experience
- Agree to participate in the study.

Sampling technique:

A stratified random sampling technique was used to recruit nursing staff (Polit et al., 2010) from all hospitals. Accordingly 375 nursing staff was chosen as follows; according to the following formula:

$$\frac{\text{Number of nurses in each hospital} \times \text{Required sample size}}{\text{Total number of nurses in all hospital}}$$

New -Surgical Hospital (80 nurses),	$\frac{592 * 375}{2770} = 80$
Internal –medicine Hospital (76 nurses),	$\frac{564 * 375}{2770} = 76$
Emergency Hospital (41 nurses),	$\frac{299 * 375}{2770} = 41$
Emergency department (12 nurses),	$\frac{87 * 375}{2770} = 12$
The delivery and premature Hospital (33nurses),	$\frac{243 * 375}{2770} = 33$
Outpatient Hospital (31 nurses),	$\frac{230 * 375}{2770} = 31$
Cardiac and chest Hospital (54 nurses),	$\frac{398 * 375}{2770} = 54$

The pediatric Hospital (41 nurses),

$$\frac{303 * 375}{2770} = 41$$

and El Sadat Hospital (7 nurses).

$$\frac{54 * 375}{2770} = 7$$

Sample size:

Sample size was calculated by Steven K. Thompson Equation from the next formula (Thompson, 1987).

$$n = \frac{N \times P(1-P)}{[(N-1) \times (d^2 \div z^2)] + p(1-p)}$$

Where: **n**: Sample size, **N**: Population size, **z**: Confidence level at 95% (1.96), **d**: Error proportion (0.05), **p**: Probability (50%).

The ideal sample size was estimated at a confidence level at 95% (1.96), error proportion (0.05), and the sample size required was 375.

Tools of data collection:

To fulfill the purpose of this study, two tools were used for data collection as follows:

Tool I: Practice work Environment questionnaire:

It consisted of two parts as follows:

Part one: personal and job characteristics of nursing staff, which include the data about characteristics of nurses such as their age, gender, years of experience, and educational qualifications and department type.

Part two: Practice Environment Scale of the Nursing Work Index (PES NWI):

It was developed by researcher based on literature review (Parker et al., 2010) to assess nursing staff perception about nursing work environment. This scale includes (30 items) that categorized into five domains namely: Nurse Manager, ability, leadership and support of nurses (8 items), Nurse Participation in the workplace (8 items), Staffing and resource adequacy (5 items), Nursing foundations for quality Care (6 items) and Collegial nurse - physician relations (3 things).

System of Scoring

The statement's response was gauged using a 4-point Likert Scale as follows (strongly disagree 1, disagree 2, agree 3, strongly agree 4).

Range of score from 30-120 points. Based on a proven cutoff point factor, the total score was divided into three levels:

- Low if the score is below fifty percent.
- If the score falls between 50% and 75%, moderate.

- Elevated if the score exceeds 75%.

Tool II: the CD-RISC (Connor-Davidson Resilience Scale):

It was created by (Heritage et al., 2021), to measure resilience level of nursing personnel. There were twenty-five things in all. grouped inside five dimensions namely : Positive acceptance of change and secure relationships (5 items), Trust in one's instincts, tolerance of negative affect, and strengthening effects of stress (7 items), Personal competence, high standards and tenacity (8 items), Control (3 items) and Spiritual influences (2 items).

Scoring System

The response of statement was measured by using a 5-points Likert scale as follows(not true at all 0, rarely true 1, sometimes true 2, often true 3, and true nearly all the time 4).

Range of score from 25-100 points. Three tiers were created from the total score based on a validated cutoff point factor;

- If the score is less than 50%, the resilience level is low.
- If the score falls between 50% and 75%, the resilience level is moderate.
- A high degree of resilience if the score is greater than 75%

Content validity and reliability:

The questionnaires were translated into Arabic language, and then Face and content validity were established by a panel of five experts from nursing administration department, faculty of nursing at Zagazig University. Content and face validity sheet involved two parts: the first part included the opinions of the experts for each item that were recorded on a two-point scale: relevant, and not relevant.

The second part covered general or overall opinion about the form which express their opinions and comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease for implementation. According to their opinions, all recommended modifications were performed by the researcher.

The reliability of the tools was tested using internal consistency method of Cronbach's alpha.

For practice work environment scale; number of items was 30 and Cronbach's alpha was 0.918.

There were 25 items on the Connor-Davidson Resilience Scale, and its Cronbach's alpha was 0.879.

Fieldwork:

The field work was executed in three months from the beginning of December 2023 to the end of February 2024. In order to clarify the study's goal and secure formal approval, the researcher first met with the hospital's nursing and medical directors. In the second stage, participants received the questionnaire and instructions on how to complete it. Throughout the morning and afternoon shifts, the participants were prompted to complete the tools. Before being distributed; the questionnaire took 20 to 30 minutes to complete. Participants in the study setting were given an explanation of the study's goal and the tool's components. The researcher examined each tool after nursing staff completed it to make sure that the information was complete and was available for any clarifications during collection. Four days a week, the researcher went to the chosen location to gather data alone.

Pilot study:

Ten percent of the study participants (38 nurses) participated in a pilot study to evaluate the tools' applicability, viability, and practicability. Additionally, to calculate how long it will take to complete the questionnaires. Staff nurses were chosen at random for the pilot study one week prior to data collection, and they were not included in the main study population. And the required adjustments were made. Assuring the tool's clarity and adaptability as well as identifying potential roadblocks and issues during data collection were the goals of the pilot study. Estimating how long it would take to complete the forms—between 20 and 30 minutes was also helpful.

Administrative and ethical consideration:

The study idea was accepted by Zagazig University's nursing faculty's ethical committee, Egypt with ethical code was M.D.ZU.NUR/195/12/9/2023. To explain the purpose of the study and get their cooperation and agreement, the researcher visited with the medical and nursing directors of the hospital. The researcher met with the study participants to inform them of the study's goal and secure their consent to take part.

The chairman of the board of directors at Zagazig University Hospitals received formal letters from the dean of the nursing faculty at Zagazig University asking for cooperation and permission to conduct this study. The head nurse of each unit and the nursing director of each hospital then orally gave their consent after outlining the purpose and nature of the work.

Statistical analysis:

The Statistical Package for the Social Sciences (SPSS), version 23.0, was used to organize, categorize, tabulate, and statistically analyze the data. Descriptive statistics, such as frequency, percentage, mean, and standard deviation, were used to show the data. Chi-square and correlation coefficient were also employed to look at the relationship between the study variables. A nova, independent –test were used and A significant level value was considered when $p < 0.05$.

Results:

Table (1): shows personal and job related characteristics of nursing staff. It is clear from this table that, more than one third of nursing staff (36.8%) was in the age group 30 to less than 40 years old. The mean age was 37.90 ± 4.61 . The highest percentage of them was female, and married (89.6%, &70.1% respectively). More than half of them had technical institute education and more than 10 years of experience (58.1%, &68.5% respectively). As well, more than one third of them work in inpatient department (38.7%).

Table (2): shows that, the high perception level of nursing staff toward their nursing work environment was related to nurse manager, ability, leadership and support of nurses, and collegial nurse physician relation domains (50.9%, &44.3% respectively). On the other side, (64.5%, 50.7%, & 46.1%) of nursing staff had low perception level regarding staffing and resource adequacy, nurse participation in the workplace, and nursing foundations for quality care domains respectively.

Figure (1): reveals that fewer than half (42.9%) of the nursing staff's opinion of their work environment was negative, and about third of them (32.3%) had a high perception toward their nursing work environment. While, (24.8%) of them

had a moderate level toward their nursing environment.

Table (3): displays that, the majority of nursing staff (81.3%) had high resilience at work place regarding spiritual influences, followed by trust in one's instincts, tolerance of negative affect, and strengthening effects of stress, control, positive acceptance of change and secure relationships, and personal competence, high standards and tenacity (58.7%,56.3%,55.2%,and 46.1% respectively).

Figure (2): This number indicates that over 50% of nursing staff (59.5%) possessed a great degree of resilience, and less than third of them (24.0%) had a moderate level of resilience, compared to less than one fifth of them (16.5%) had a low level of resilience.

Table (4): shows relationship between the individual traits of nursing staff and their degree of opinion on the nursing workplace. This table indicates that there was statistically significant relation between nursing staff perception toward their nursing work environment and their age, level of education, years of experience, and name of the department at p-value (0.012, 0.001, 0.003, and 0.021 respectively).

Table (5) : represents that there was statistically significant relation between nursing staff resilience level and their age, gender ,level of education ,and years of experience at p- value(0.001, & 0.027, 0.000, & 0.002) respectively.

Table (6): this table shows that there was positive statistically significant correlation between nursing staff perception toward their work environment and resilience ($r= 0.657$ at $p\text{-value}=0.000$).

Discussion:

The work environment for nurses is defined as the organizational features that either support or limit nursing practice. A positive, safe, and fulfilling work environment motivates nurses to perform at their highest level and deliver high-quality care. Workload and staffing levels, decision-making authority, job demands and complexity, effective leadership, and the capacity to take part in unit-based choices are all significant determinants of nurses' work environments (**Moisoglou et al., 2020**). In order to handle challenging circumstances, particularly during public health emergencies, frontline healthcare personnel must be resilient. Positive

coping skills are linked to resilience, which can improve nurses' work performance by enabling them to react quickly, improve their capacity to handle pressure, avoid work tiredness, and avoid psychological issues. The capacity to adjust to everyday duties in spite of social obstacles or very adverse situations is known as resilience (**Lyng et al., 2022**). The aim of this study was to determine the relation between nursing work environment and resilience among nursing staff at zagazig university hospitals.

Concerning the perception levels toward the nursing work environment among nursing staff

The finding of the present study indicated that less than half of nursing staff had a low perception level toward their nursing work environment, , and about third of them had a high perception toward their nursing work environment. While, the lowest percentage of them had a moderate level. This may be due to the shortage of nursing staff and heavy workload which make them focus only on providing care for patients, not paying attention to participation in hospital policies, decisions, and philosophy of nursing that used in patient care or completing their tasks on advancing their career.

These findings were supported by (**AL-Ghwary et al., 2024**), in Jordan to investigate how the work environment affects registered nurses' structural empowerment in government hospitals, and revealed that the nursing staff's moderate view of the work environment was the lowest proportion. Additionally, another study carried out by (**Hegazy et al., 2022**), in Egypt to explore nurses' perception of work environment factors and its relation with their work engagement and proved that two thirds of studied nurses had poor perception of work environment factors.

Concerning distribution of nursing work environment domains as perceived by nursing staff

The findings of the present study indicated that the high perception level of nursing staff toward their nursing work environment was related to domains of nurse manager, ability, leadership and support of nurses, and collegial nurse physician relation. While, the low perception level was related to staffing and resource

adequacy, nurse participation in the workplace, and nursing foundations for quality care respectively. This may be due to they perceived that their nursing manager is highly visible, accessible, listens and responds to their concerns. In addition, presence of teamwork between doctors and nurses are very pivotal. On the other side, the shortage of nursing staff and absence of adequate opportunity for career development can contribute to these results.

The study results go in the same line with the study by **(Sutherland et al., 2022)**, who conducted a study in France to examine good working relationships: how healthcare system proximity influences trust between healthcare workers, and found that regardless of nursing staff role, they were endorsed in positive relationship with other healthcare workers. Another study carried out by **(Hussein, Saad, & Badran., 2021)**, in Egypt to assess the relationship between staff nurses perception regarding nursing managers` leadership practices and their knowledge sharing, and found that the high level score of nursing staff perception toward their work environment was related to nurse manager, ability, leadership and support of nurses. Also **(Mohamed, Ismail, & Abed., 2020)**, who conducted a study in Egypt to explore the impact of nursing staff perception of work environment on turnover rate , and revealed that the low level score of nursing staff perception were related to staffing and resource adequacy. Moreover another study carried out by **(Atta et al., 2019)**, in Egypt, to identify nursing staff perception regarding factors influencing their performance, and asserted that the low level score of nursing staff perception were related to nurse participation in the workplace. Conversely, these findings were in disagreement with a previous study conducted by **(Mahaphuli et al., 2024)**, in South Africa to describe the different nursing categories` perceptions of the practice environment and quality of care, and proved that all nursing categories had a low perception toward their nurse manager, ability, leadership and support of nurses. Additionally, **(Lucas et al., 2023)**, conducted a study in Portugal to analyze the relationship between nursing practice environment and the nurses` perception of quality of care, patient safety, and safety culture, and found that

nursing foundations for quality of care dimension to have the best rating and high level score.

Concerning total nursing level staff resilience

According to the current study's findings, over 50% of nursing staff members demonstrated a high degree of workplace resilience, and less than third of them had a moderate level of resilience, In contrast, less than one-fifth of them had low resilience. This might be because of the experience of nurses to deal with difficult and stressful situations in their workplace, and their ability to express their stressors with others. These findings were in agreement with a study carried out by **(Mohamed et al., 2024)**, in Egypt to investigate nurses' perception about resilience in workplace, and asserted that more than two third of the studied nurses had high-level of resilience at workplace. Moreover, This outcome was consistent with another study conducted by **(Sihvola et al., 2023)**, Finland to describe nurses' resilience, job satisfaction, intentions to leave and quality of care, and explain their relationships during COVID-19pandemic, and asserted that over half of nursing staff showed a high resilience level. Also, another study performed by **(Han et al., 2023)**, in China to provide an overview of the experiences of nurses' resilience development, and revealed that the majority of nursing staff had a high total level of resilience at workplace.

Concerning distribution of resilience domains among nursing staff

The finding of the present study revealed that the majority of nursing staff had a high resilience at work place regarding spiritual influences, followed by trust in one`s instincts, tolerance of negative affect, and strengthening effects of stress, control, positive acceptance of change and secure relationships, and personal competence. This may be due to their feeling that God can help them, and anything can happen for a reason. In addition, they had experiences that enable them to deal with different situations and succeed to manage it. These in turn build their self-esteem and can control their emotions. Also, receiving support from their peers, supervisors, and physicians can contribute to their acceptance to change. These findings were in agreement with a study carried out by **(Brewer et al., 2023)**, in USA to explore nursing staff perceptions of the challenges they face that impede their success and their recommendations for the supports they

need to overcome these challenges, and found that majority of nursing staff showed high resilience to workplace spiritual influences and workplace spiritual influences had positive impact on nurses' moral resilience. Another study carried out by (Yusefi et al., 2022), in Iran to identify nursing difficulties during the COVID-19 outbreak. and found that a significant portion of the nursing staff demonstrated a moderate to high levels of resilience regarding trust in individual instincts, had confidence in their intuition and decision-making abilities, which can support their resilience in various work-related situations, were capable of managing and coping with negative emotions and stressors in a constructive and adaptive manner.

Concerning relation between personal characteristics of nursing staff and their perception level toward nursing work environment

The finding of the present study revealed that, there was a statistically significant relation between nursing staff perception toward their work environment and their age, level of education, years of experience, and their department. This might be explained by the extensive experience that came from working at a young age after graduating from technical school and their working in Inpatient department make them focus on providing patient care, not participating in committees, polices, which contribute to their low perception of their work environment. This outcome was consistent with research done by Wang and others., (2024), Shanghai to explore and categorize nurses' personality traits, with a focus on analyzing differences in their perceptions of the nursing work environment, and asserted that there is statistically significant relation between age, experience of nursing staff and their work environment.

Concerning relation between personal characteristics of nursing staff and their resilience level

The finding of the present study revealed that, there was a statistically significant relation between nursing staff resilience level at workplace and their age, gender, level of education, and years of experience. This could be attributed to the older female nurses, with more experience in their workplace after obtaining diploma in nursing, can cope better to stressful situation in their work and develop resilience.

This outcome was consistent with research done by (Cooper and others., 2022) , Australia to investigate the impact of outside variables on nurse resilience and apply this understanding to a revised definition of nurse resilience, and revealed that there is statistically significant relation between resilience and nursing staff age, gender, and years of experience. Another study conducted by (Alameddine et al., 2021), to investigate the level and factors associated with the resilience of nurses practicing at the main COVID-19 referral center in Lebanon, and proved that there is statistically significant relation between resilience and nursing staff age, experience.

Regarding correlation between nursing staff perception toward their nursing work environment, and resilience, the finding of the present study portrayed that, there was a positive statistically significant correlation between nursing staff perception toward their work environment, and resilience. This may be due to when nurses had perception toward their work environment effectively; they can cope with different situations and develop resilience.

This result was in the same line with the study conducted by (Shen et al., 2024), in China to investigate the relationship between psychological resilience, thriving at work, and work performance among nurses, and portrayed that, there was significantly positive correlations between work environment, and resilience. Moreover, This outcome was consistent with a research conducted by (Yun, Zhou, & Zhang., 2022) , in China to explore and examine whether high-performance work systems can impact thriving at work and job burnout via resilience at work among nurses, and revealed that there was positive crucial correlations between resilience, and thriving at work. On the other hand, resilience at work is a type of individual ability that can enhance a nurse's thriving at work.

Conclusion

In the light of the main study results, it can be concluded that less than half of nursing staff had low perception level toward their nursing work environment, and more than half of them had a high level of resilience at workplace. Additionally, there was a positive statistically significant correlation between nursing staff perception toward their work environment and their resilience

Recommendations:

Based on the study findings, the following recommendations were derived and suggested:

- Implementing effective strategies by health care organization to improve nursing staff perception about nursing work environment enhance resilience and better thriving at work.
- Providing adequate resources by health care organization that can support nursing staff work
- Creating an equitable work environment by maintaining open clear communication with all nursing staff.
- Providing active staff development program for involving nursing staff in the internal governance of the hospital.
- Conducting educational program to nursing staff to increase their perception toward nursing work environment.

Table (1): Frequency and percentage distribution of the nursing staff according to their personal and work related characteristics (n=375).

Demographic characteristics	N	%
Age		
20 - <30	95	25.3
30 - <40	138	36.8
40 - <50	80	21.3
50 - 60	62	16.6
Mean ± S.D 37.90±4.61		
Gender		
Male	39	10.4
Female	336	89.6
Marital status		
Single	102	27.2
Married	263	70.1
Widowed	8	2.2
Divorced	2	0.5
Level of education		
Diploma in Nursing	89	23.7
Technical Institute	218	58.1
Bachelor	55	14.7
Master degree or more	13	3.5
Years of experience		
<5 years	41	10.9
5-10 years	77	20.6
>10 years	257	68.5
Mean ± S.D 9.98±0.25		
Name of the department in which staff nurses work		
Inpatient department	145	38.7
Intensive care units	113	30.1
Operations room	60	16.0
Outpatient Clinics	57	15.2

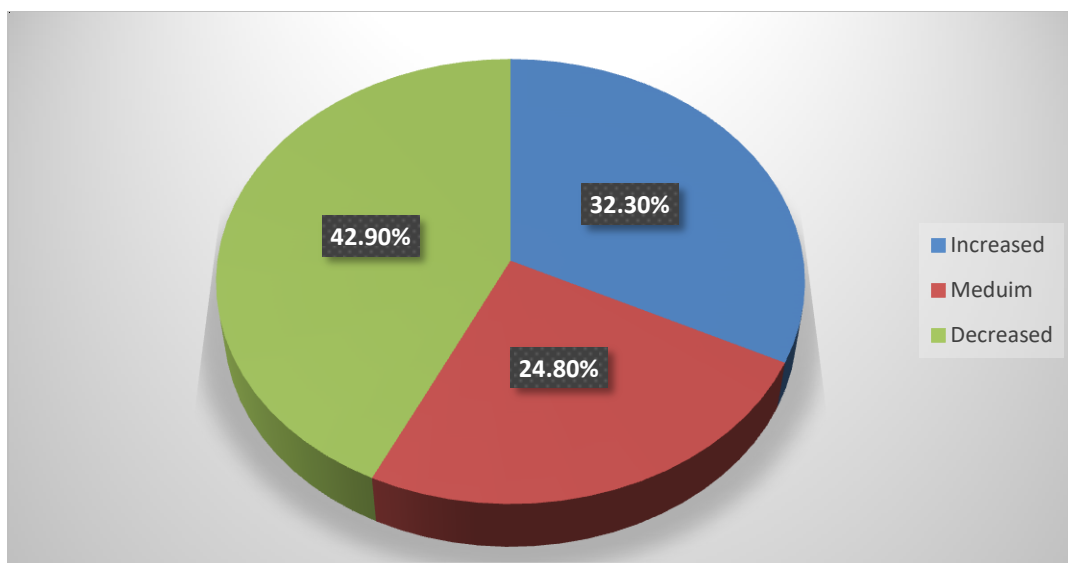


Figure (1) Overall nursing staff perceptions of the work environment (n=375).

Table (2): Distribution of nursing work environment domains as perceived by nursing staff (n=375).

Items	High		Moderate		Low	
	No	%	No	%	No	%
Nurse manager, ability, leadership and support of nurses	191	50.9	75	20.0	109	29.1
Nurse participation in the workplace	94	25.0	91	24.3	190	50.7
Staffing and resource adequacy	49	13.1	84	22.4	242	64.5
Nursing foundations for quality care	104	27.7	98	26.1	173	46.1
Collegial nurse physician relation	166	44.3	119	31.7	90	24.0

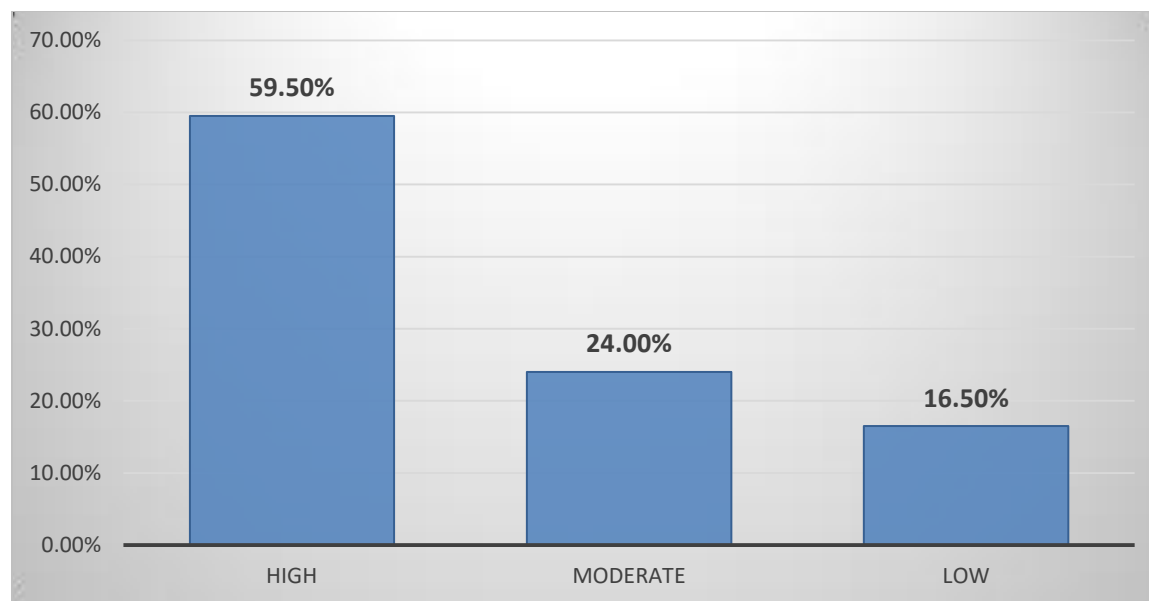


Figure (2): Total level of nursing staff resilience (n=375).

Table (3): Distribution of resilience domains among nursing staff (n=375).

Items	High		Moderate		Low	
	No	%	No	%	No	%
positive acceptance of change and secure relationships	207	55.2	90	24.0	78	20.8
trust in one's instincts, tolerance of negative affect, and strengthening effects of stress	220	58.7	103	27.5	52	13.8
Personal competence, high standards and tenacity	173	46.1	117	31.2	85	22.7
Control	211	56.3	96	25.6	68	18.1
Spiritual influences	305	81.3	45	12.0	25	6.7

Table (4): Relationship between the individual traits of nursing staff and their degree of opinion on the nursing workplace (n=375).

Items	Nursing staff perception toward nursing work environment						X ²	P-Value	
	High N=121		Moderate N=93		Low N=161				
	N	%	N	%	N	%			
Age	20-<30	1	0.8	10	10.8	84	52.2	4.967	0.012*
	30-<40	5	4.2	59	63.4	74	46.0		
	40-<50	61	50.4	18	19.4	1	0.6		
	50-60	54	44.6	6	6.4	2	1.2		
Gender	Male	10	8.3	9	9.7	20	12.4	1.154	0.053
	Female	111	91.7	84	90.3	141	87.6		
Marital status	Single	37	30.6	27	29.0	38	23.6	1.611	0.089
	Married	81	66.9	63	67.7	119	73.9		
	Widowed	3	2.5	2	2.2	3	1.9		
	Divorced	0	0	1	1.1	1	0.6		
Level of education	Diploma in Nursing	2	1.7	3	3.2	84	52.2	6.215	.001**
	Technical Institute	56	46.3	85	91.4	77	47.8		
	Bachelor	53	43.7	2	2.2	0	0		
	Postgraduate	10	8.3	3	3.2	0	0		
Years of experience	<5 years	2	1.7	4	4.3	35	21.7	9.091	.003**
	5-10 years	2	1.7	5	5.4	70	43.5		
	>10 years	117	96.6	84	90.3	56	34.8		
Name of department	Inpatient	7	5.7	20	21.5	118	73.3	4.658	0.021*
	Intensive care units	63	52.1	48	51.6	2	1.2		
	Operations room	48	39.7	11	11.8	1	0.6		
	Outpatient Clinics	3	2.5	14	15.1	40	24.9		

X² chi square test, Not significant at p>0.05

Table (5): Relation between personal characteristics of nursing staff and their resilience level (n=375).

Items		Nursing staff resilience						X ²	P-value Value
		High N=223		Moderate N=90		Low N=62			
		N	%	N	%	N	%		
Age	20-<30	93	41.7	2	2.2	0	0	10.120	.001**
	30-<40	111	49.8	25	27.8	2	3.2		
	40-<50	12	5.4	59	65.6	9	14.5		
	50-60	7	3.1	4	4.4	51	82.3		
Gender	Male	31	13.9	7	7.8	1	1.6	4.204	.027*
	Female	192	86.1	83	92.2	61	98.4		
Marital status	Single	37	16.6	43	47.8	22	35.5	1.401	.058
	Married	181	81.2	44	48.9	38	61.3		
	Widowed	4	1.8	2	2.2	2	3.2		
	Divorced	1	0.4	1	1.1	0	0		
Level of education	Diploma in Nursing	2	0.9	28	31.1	59	95.2	10.76	.000**
	Technical Institute	155	69.5	60	66.7	3	4.8		
	Bachelor	54	24.2	1	1.1	0	0		
	Postgraduate	12	5.4	1	1.1	0	0		
Years of experience	<5 years	37	16.6	3	3.3	1	1.6	9.801	.002**
	5-10 years	72	32.3	4	4.4	1	1.6		
	>10 years	114	51.1	83	93.3	60	96.8		
Name of department	Inpatient	91	40.8	34	37.8	20	32.3	1.327	.061
	Intensive care units	70	31.4	25	27.8	18	29.0		
	Operations room	30	13.4	17	18.9	13	21.0		
	Outpatient Clinics	32	14.2	14	15.5	11	17.4		

X² chi square test, Not significant at p>0.05

Table (6): Correlation between nursing staff perception toward their nursing work environment, resilience and workplace thriving (n=375).

variables	perception toward their work environment	
	r	p
resilience	0.657	0.000**

(**) Statistically significant at p<0.01. r Pearson correlation.

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