

## Role of Job Demands and Resources Model in Nurses' Job Embeddedness and Retention at Intensive Care Units



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### ABSTRACT

**Background:** The job demands resources (JD-R) model provides a theoretical framework to understand how job characteristics impact nurse job embeddedness and retention at Intensive Care Unit (ICU). Aim: To determine the role of job demands and resources model in nurses' job embeddedness and retention at Intensive Care Units. Method: Descriptive correlation design was used with (189) of staff nurses from Intensive Care Units of pediatric hospital. Four tools were used; Job Demands Questionnaire, Job Resources Questionnaire, Job Embeddedness Scale, and Intensive Care Nurses' Retention Questionnaire. Results: Majority of (89.9%, 59.3%, and 62.4%) studied nurses were moderate level of job demand, job embeddedness and retention at Intensive Care Unit at Pediatric Hospital respectively. As well more than half (57.1) represent fair level of job resources, and there was highly statistically significant correlation between total job demand, job resources with total job embeddedness and total retention at work place. Conclusion: Job demands resources models improve job embeddedness and nurses' retention as well as job embeddedness is a predictor for nurse's job retention at Intensive Care Unit. Recommendations: Ensuring of organizational policymaking to provide nurses with adequate job resources and support system to manage job demand pressures, developing standards for placing nurse in roles that are appropriate for their competencies in order to increase their embeddedness and Implementing recognition and reward system to acknowledge the contributions of ICU staff.

**Keywords:** Intensive Care Unit, Job Demand and Resources Model, Job Embeddedness, Retention, Staff Nurse

### Introduction

Nurses are essential contributors to the improvement of healthcare quality and safety. The nursing profession is a crucial component of the healthcare system. The vast majority of Healthcare practitioners consist of nurses, who hold a pivotal position in the healthcare system (Haddad, Annamaraju & Toney-Butler, 2022). The primary responsibility for coordinating and delivering care to patients and their families lies with nurses, who are indispensable members of the healthcare team (Khodayarimotlagh, Ahmadi, Sadooghiasl & Vaismoradi, 2022).

The changing requirements of the population and the evolving nature of society present problems for the nursing profession as well as other healthcare professions. Along with the strain of heavier workloads and emotional exhaustion is linked to a depletion of energy and emotional resources as a result of increased workplace stressors, can have an impact on turnover intention that have a negative impact on intention to leave and can increase job embeddedness and retention (Bautista et al., 2020).

Intensive care nurses encounter a range of difficulties, including aspects of their job, workload, and elevated levels of physical, mental, and emotional strain at the workplace, which could influence their satisfaction with their work. Additionally, intensive care nurses play numerous crucial roles within interprofessional teams, serving as caregivers, educators on health matters, administrators, unit managers, and researchers, with the care they deliver being notably more intricate compared to other hospital departments (Aitken et al., 2019). Therefore, it is imperative for these nurses to promptly address elevated requirements consistently to effectively carry out their responsibilities (Mousazadeh, Yektatalab, Momennasab & Parvizy, 2019).

Working in the intensive care unit (ICU) setting demands a high level of proficiency in multitasking, coupled with a substantial workload, and the obligation to deliver specialized care for patients who are critically ill and dependent. The potential overwhelm experienced by nurses in this field may result in occupational burnout due to the significant stress levels, subsequently contributing to diminished productivity,

increased staff turnover, and feelings of discontentment with their job, there for initiation of health work environment is the most critical aspect to promote nurses' retention which intern to improve performance (Alharbi& Alshehry, 2019).

The fundamental assumption in the job demand and resources model is that individual job roles or occupations possess unique risk factors for job-related stress. Consequently, this model is versatile and can be customized for application in diverse occupational environments. The primary concept of the Job Demand-Resources (JD-R) model involves a dual process in which job demands initiate a decline in health, causing negative health implications, and job resources activate a motivational process, leading to positive performance outcomes. This model delineates two separate categories of work environment factors, namely job demands and job resources, which are associated with unfavorable and favorable consequences, respectively. Because of this, the JD-R model states that when job demands are high, job resources become more salient and start a motivating process that leads to employment retention (Boyd & Nowell, 2020).

Clear job demands are those tasks that are necessary for any job; there are tasks that must be completed. Job demand is defined more precisely as those elements of the job physical, psychological, social, or organizational that need constant physical and or psychological effort, either cognitive or emotional, and is therefore linked to specific physiological or psychological costs (Bakker & Demerouti, 2017). Job demands can also be defined as everything that needs energy to perform, such as physical workload, deadlines, and patient interaction (Johnston, O'Reilly, Scholz & Mitchell, 2022).

Positively stated, job resources are organizational, social, or physical elements that help to accomplish objectives and feel less stressed. It is expected of those who are committed to their work that they will be highly enthusiastic, full of energy, and completely involved in their task (Truong, Nguyen & Phan, 2021). While, job resources are negatively related to burnout than job demands, but they have a consistent negative relationship with the burnout component cynicism. Nurses lose interest in their jobs and develop negative attitudes when they lack control, do not receive regular feedback and cannot advance professionally (Arnold, Bakker, Juriena & De Vries, 2021).

Job resources are a range of elements that help to reduce the negative consequences of rising job demands and inspire nurses, including autonomy, skill development, management assistance, and supervisor feedback. Management provides suitable job

resources, both financial and non-financial, to nurses to help them perform better. Job resources can serve as a safety net to help achieve organizational objectives when job demands are high. Nurses' performance is significantly impacted by work-related resources and job demand, which both promote job embeddedness (Adil, & Baig, 2018).

Job Embeddedness (JE) is the sum of the forces that keep people employed. JE is distinct in that it focuses on why a nurse stays in their current position rather than why the same nurses would remain at their current job There are three major dimension of job embeddedness as; fit, links, and sacrifice. All of these dimensions contribute to nurses' remaining connected to patients. People are drawn to their surroundings, and this connection leads to their loyalty to organization. The term *fit* dimension refers to a person's compatibility with organization and its surroundings. *links* dimension are a person's connections within an organization and in the community. Nurses with more connections on and off the job are more likely to remain, even if they are dissatisfied with the organization as a whole and finally *sacrifice* dimension are the material and psychological benefits that must be obtained are addressed when leaving organization. Nurses will continue to work if their conditions are met and advantages are perceived (Ma, Mayfield & Mayfield, 2018).

According to the theoretical framework known as the Job Demands-Resources (JD-R) model suggests that job demands have the potential to jeopardize an individual's overall well being and cause foster job strain but on the other side presence of job resources can act as motivational pathway that increase nurse retention .On the other side there are a variety of factors such as nurses' shortage, increased workload, increase demand, working long hours, difficult tasks, low pay, low resources and poor working environment are significant challenge for retaining nurses (Sija, 2022).

Nurses' retention was defined as a process in which high loyalty among nurses to their organization and the amount of time nurses stay at their jobs. Every organization prioritizes nurse retention in order to compete, attract, and reduce turnover (Rafiq et al., 2019). Nurse retention is the capacity of an organization to keep its nurses. It could alternatively be defined as a process designed to encourage and bolster assets' retention within a firm for a prolonged period, ensuring the firm's enduring sustainability. Nurses want to work for an organization that value their contributions, offers a range of options, and makes them feel like they're in a second home (Pham, Chang, Wong, Van & Teng, 2022).

Nurses are an important part of healthcare system because they make up the majority of the health profession, however, a lack of retention in organizations and high turnover are the reasons why there are still shortages in the nursing profession. Using efficient retention techniques strengthens the nursing profession, increases job happiness and attraction, lowers recruitment expenses, and enhances patient satisfaction with care and quality outcomes (Alzahranii, 2022).

#### Significance of the Study

In the hospital context, Intensive Care Units (ICUs) are particularly stressful environments, serving for care delivery to critical patients. The work carried out at ICU is intricate and rigorous. Nurses must possess the readiness to provide healthcare to patients experiencing significant hemodynamic changes promptly. This necessitates a profound understanding and high level of proficiency to execute decisions effectively and in a timely manner. Because they work in a challenging setting, nurses in ICUs are therefore more likely to quit their jobs. In addition to worsening the nursing shortage, this also lowers the standard of care and compromises patient safety at ICUs. Otherwise, this phenomenon may lead to prolonged recruitment processes and increased expenses, along with a decline in productivity, financial performance, expertise, competencies, and organizational capabilities (Boyd & Nowell, 2020).

In pediatric ICUs, it was observed that most nurses were stressful, high workload, and like a tendency to quit of job. Empirical researchers have confirmed the negative aspect of job demands via a health impairment process and the positive aspect of job resources via a motivational process. The JD-R model is fundamental in the current study as it serves as a foundational framework for investigating job embeddedness and retention among ICU nurses. This model delineates the mechanisms through which the well-being of intensive care nurses is influenced by two overarching categories of working conditions, specifically job demands and job resources. Hence the present study the present study aims to determine role of job demands and resources model in nurses' job embeddedness and retention in Intensive Care Units.

#### Aim of the Study

This study aims to determine the role of job demands and resources model in nurses' job embeddedness and retention at Intensive Care Unit (ICU) Pediatric Hospital.

#### Research questions

The specific research hypotheses are:

- H1.** Job demands are correlated with both intensive care nurses' job embeddedness and retention at Mansoura University Children Hospital.
- H2.** Job resources are correlated with both intensive care nurses' job embeddedness and retention at Mansoura University Children Hospital.

#### Method

##### Design

Descriptive correlational design was utilized to conduct this study.

##### Setting

The investigation was carried out within the Intensive Care Units (ICU) situated at Mansoura University Children Hospital affiliated with Mansoura University Hospitals in Daqahlia Governorate, Egypt. The study was conducted in five intensive care units with the total bed capacity (62) in studied ICU.

##### Subjects

A convenience sample of all available (189) staff nurses at the time of study and who working at Mansoura University Children Hospital in the previous mentioned ICUs and meets the requirement of a minimum of one year's experience to express their opinion about study variables.

##### Data Collection Tools

Four tools were used for data collection in the present study namely; Job Demands Questionnaire, Job Resources Questionnaire, Job Embeddedness Scale, and Intensive Care Nurses' Retention Questionnaire.

##### Tool (1): Job Demands Questionnaire:

It was developed by the researcher based on literature review. This questionnaire divided into two parts as follow:

**Part (1):** It was used to identifying personal characteristics of the studied nurses as; age, years of experience, gender, level of education and marital status.

**Part (2):** Job Demand Questionnaire: It includes (32) items related to the intensive care nurses' job demands at their workplace. These items were grouped under four categories as follows; time pressure and workload (9 items) that was developed by (Janssen, 2001), Role conflict (5 items) that was developed by (Behfar, Peterson, Mannix, & Trochim, 2008). Role ambiguity (7 items) that was developed by (Tang, & Chang, 2010), and finally, job insecurity (11 items) that was developed by (Witte, 1999). Accordingly, each response was assigned a

score from along a 5-point Likert scale, varying from 5 (strongly agree) to 1 (strongly disagree).

**Scoring system:** Job demands domains was categorized into three levels according to cutoff point as; low job demands (<50%), moderate demands (50%-75%), and high job demands (>75%).

#### **Tool (II): Job Resources Questionnaire:**

It was developed by **(Bakker, Demerouti, & Verbeke, 2004)**. It aims to define the nurses' job resources that facilitate the attainment of work goals, stimulate personal growth or reduce job demands. It included (34) items under six subscales namely; autonomy (4 items), organizational support (8 items), performance feedback (6 items), growth opportunities (3 items), supervisor support (3 items), and job control (10 items). Each response was assigned a score from along a 5-point Likert scale, varying from 5 (strongly agree) to 1 (strongly disagree).

**Scoring system:** Job resources dimensions were divided into three levels according to cutoff point as; poor (<50%), fair (50%-75%), and good (>75%)

#### **Tool (III): Job Embeddedness Scale:**

It was developed by **(Mitchell, Holtom, Lee, Sablinski, & Erez, 2001)**. It aims to assess nurses' job embeddedness in their workplace. It includes (23) items categorized under of three subscales namely; link to the organization (7 items), fit to organization (7 items), and organization-related sacrifice (9 items). The response was scored on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

**Scoring system:** The total score of job embeddedness dimensions were divided into three levels according to cutoff point as; low (<50%), moderate (50%-75%), and high (>75%).

#### **Tool (IV): Intensive Care Nurses' Retention Questionnaire:**

It was developed by **(Mitchel, 1981)**. It aims to measure nurses' retention at their workplace in the organization. It includes four items that indicate graduate nurses intended to stay at work. The response used a 5-point Likert scale that ranged from (5=strongly agree) to (1= strongly disagree).

**Scoring system:** Total score of nurses' intentions was categorized into three levels according to cutoff point as; low (<50%), moderate (50%-75%), and high (>75%).

### **Validity and Reliability of the Tool**

Study tools was evaluated for its face and content validity by a panel of five expertise academic staff from Faculty of Nursing at Mansoura University who revised the tools for clarity, applicability, comprehensive, understanding, and ease for implementation and according to their opinions, modifications were done. Reliability test of the study tools was done, was tested by using Cronbach alpha test. Four tools were modified and translated to Arabic language by the researcher. The reliability of job demands, job resources, job embeddedness and nurses' intention to stay were (0.70, 0.93, 0.94, &0.71) respectively.

#### **Pilot Study**

A pilot study was carried out on a sample of the nurses under study representing about 10% of study (19 nurses) that randomly selected and were excluded from the total sample to appraise the clarity, feasibility and applicability of the tools and necessary corrections were done based on their response. It helps to, identifying obstacles and potential problems that may be encounter during data collection and for determining the time needed to fill in questions.

#### **Ethical Considerations**

Ethical approval was obtained from the Research Ethical Committee of Faculty of Nursing, Mansoura University. An official permission to conduct the study will be obtained from the responsible administrator of the hospital. Written an informed consent will be obtained from nursing staff who accept to participate in the study after providing the explanation of nature and aim of the study. All participants will be informed that the study is voluntary and they have the right to withdraw from the study at any time. All participants will be assured about the confidentiality of the collected data and the privacy of the study participant will be assured at all phases of the study.

#### **Data Collection Process**

The questionnaire sheets were given to the nurses after official consent was acquired from the hospital's responsible administration through the appropriate channel of communication. Between the beginning of October 2021 and the end of December 2021, data was gathered. Interviews and questionnaires were conducted with study participants during working hours at the end of morning, afternoon, and night shifts for nurses. The aim of the study and how to fill the questionnaire sheets was explained by the researcher. The time need to complete the questionnaire was 20-30 minutes.

**Data Analysis**

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 26, SPSS Inc. Chicago, IL, USA). The normality assumption was accepted. Therefore, categorical variables were represented as frequency and percentage. Continuous variables were represented as mean, and standard deviation. Independent t-test was used to test the difference between two mean of continuous variables. ANOVA-test was used to test the difference between more than two means of continuous variables. Chi-square test was conducted to test the association between two categorical variables. Pearson correlation coefficient test was conducted to test the association between two continuous variables. Statistically significant was considered as ( $p$ -value  $\leq 0.01$  &  $0.05$ ).

**Results**

Table 1 This table revealed that, majority (74.1%) of studied nurses were aged between 20-30 years old, with mean age  $29.29 \pm 5.52$ . More than two thirds (73.0%) of studied nurses were females, and majority (63.0%) of them were married. In relation to educational level more than half (55.0%) of studied nurses have bachelor's degree in nursing science. Concerning with years of experience, (57.7%) of studied nurses had 1 to 5 years of experience with mean  $7.43 \pm 6.04$ .

Table 2 shows mean percentage of job demands subscales as perceived by the studied nurses, according to this figure, time pressure and workload was highest mean percentage (70.46%) while job insecurity was lowest mean percentage (58.27%).

Table 3 shows level of job demands subscale as perceived by the studied nurses, most job demands subscale falls in the moderate levels as perceived by studied nurses including time pressure and workload (58.2%), role conflict (51.9%) and job insecurity (75.1%), as well as the highest percentage (43.9%) of them was reported to high level for role ambiguity.

Figure 1 shows total level of job demand domains, according to this figure the majority (89.9%) of the studied nurses represents moderate level of job demands while, only (9.0%) represents high level of it.

Table 4 shows mean percentage of job resources subscales as perceived by the studied nurses, it is clear that, supervisor support and growth opportunities were highest mean percentages (70.53% and 70.46%) respectively as perceived by studied nurses, while lowest mean percentages (49.07%) for organizational support subscale of job resources.

Table 5 Demonstrates levels of job resources subscales as perceived by the studied nurses, most job resources subscale falls in the fair levels as perceived by studied nurses including autonomy (62.4%), performance feedback (42.9%) and job control (37.0%) while growth opportunities (48.7%) and supervisor support (56.6%) was in good level and only organizational support (54.5%) falls in poor level.

Figure 2 shows total levels of job resources as perceived by the studied nurses. It is noticed that the majority of the studied nurses (57.1%) represents fair level of job resources while, only (21.7%) represents good level of job resources.

Table 6 shows mean percentage of job embeddedness as perceived by the studied nurses, it is clear that, fit to organization subscale were highest mean percentage (61.91%) as perceived by studied nurses, while lowest mean percentage (56.2%) for link to organization related sacrifice subscale.

Figure 3 shows total levels of job embeddedness as perceived by the studied nurses, it is noticed that, the majority (59.3%) of the studied nurses represents moderate level of job embeddedness while, only (11.6%) represents high level of it.

Figure 4 shows total levels of nurses' retention at their workplace, it is noticed that the majority (62.4%) of the studied nurses represents moderate level of retention at their workplace while only (9.5%) represents high level of it.

Table 7 shows relationship between total job demands, total job resources, total job embeddedness and total nurses' retention as perceived by the studied nurses. There was a highly statistically significant relationship between total job demands, total job resources with total job embeddedness and total nurses' retention as perceived by the studied nurses.

**Table (1): Personal Characteristics of The Studied Nurses (n=189)**

Variables	no.	%
<b>Age years</b>		
▪ 20-30	140	<b>74.1</b>
▪ 31-40	38	20.1
▪ > 40	11	5.8
<i>Mean±SD</i>	<b>29.29±5.52</b>	
<b>Gender</b>		
▪ Male	51	27.0
▪ Female	138	<b>73.0</b>
<b>Marital status</b>		
▪ Single	70	37.0
▪ Married	119	<b>63.0</b>
<b>Level of education</b>		
▪ Diploma degree	5	2.6
▪ Technical degree	78	41.3
▪ Bachelor degree	104	<b>55.0</b>
▪ Postgraduate studies	2	1.1
<b>Experience years</b>		
▪ 1-5	109	<b>57.7</b>
▪ 6-10	36	19.0
▪ > 10	44	23.3
<i>Mean±SD</i>	<b>7.43±6.04</b>	

**Table (2): Mean percentage of job demands subscales as perceived by the studied nurses (n=189)**

Job demands subscales	No of items	Min - Max	Mean±SD	Mean percentages
• Time pressure and workload	9	14.0-44.0	31.71±4.90	70.46
• Role conflict	5	7.0-25.0	16.84±3.85	67.36
• Role ambiguity	7	7.0-35.0	24.25±5.72	69.28
• Job insecurity	11	14.0-47.0	32.05±6.02	58.27
<b>Overall job demands</b>	32	74.0-139.0	104.85±11.32	65.53

**Table (3): Levels of job Demands Subscale as perceived by the Studied Nurses (n=189) in I.C.U at Mansoura University Hospital**

Job demands subscales	Levels of job demands	Score	No.	%
▪ Time pressure and workload	▪ Low (<50%)	9-22	6	3.2
	▪ Moderate (50%-75%)	23-33	110	58.2
	▪ High (>75%)	34-45	73	38.6
▪ Role conflict	▪ Low (<50%)	5-12	28	14.8
	▪ Moderate (50%-75%)	13-18	98	51.9
	▪ High (>75%)	19-25	63	33.3
▪ Role ambiguity	▪ Low (<50%)	7-17	30	15.9
	▪ Moderate (50%-75%)	18-26	76	40.2
	▪ High (>75%)	27-35	83	43.9
▪ Job insecurity	▪ Low (<50%)	11-27	34	18.0
	▪ Moderate (50%-75%)	28-41	142	75.1
	▪ High (>75%)	42-55	13	6.9

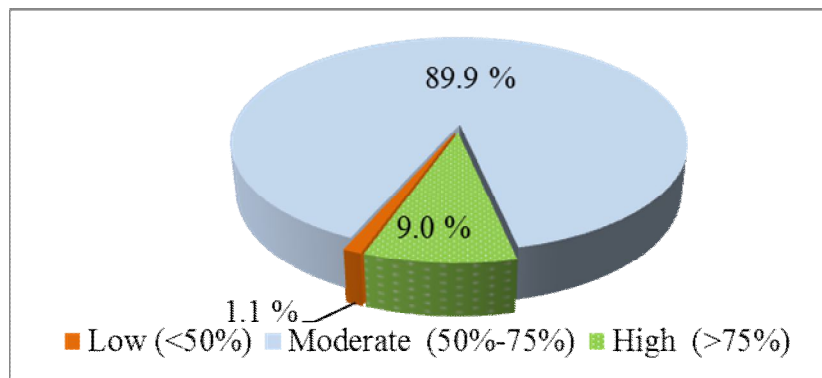


Figure1 Total level of job demands domains as perceived by the studied nurses (n=189)

Table 4 Mean percentages of job resources subscales as perceived by the studied nurses (n=189)

Job resources domains	No of items	Min - Max	Mean±SD	Mean percentages
● Autonomy	4	4.0-20.0	12.81±3.01	64.05
● Organizational support	8	8.0-61.0	19.63±7.73	49.07
● Performance feedback	6	6.0-29.0	19.53±5.40	65.1
● Growth opportunities	3	3.0-15.0	10.57±2.81	70.46
● Supervisor support	3	3.0-15.0	10.58±2.82	70.53
● Job control	10	10.0-50.0	31.07±9.77	62.14
<b>Overall job resources</b>	<b>34</b>	<b>38.0-163.0</b>	<b>104.47±25.20</b>	<b>61.45</b>

Table (5): Levels of job resources domains as perceived by the studied nurses (n=189)

Job resources	Levels of job resour	Score	No.	%
■ Autonomy	Poor (<50%)	4-9	26	13.8
	Fair (50%-75%)	10-15	118	62.4
	Good (>75%)	16-20	45	23.8
■ Organizational support	Poor (<50%)	8-19	103	54.5
	Fair (50%-75%)	20-30	69	36.5
	Good (>75%)	31-40	17	9.0
■ Performance feedback	Poor (<50%)	6-14	39	20.6
	Fair (50%-75%)	15-22	81	42.9
	Good (>75%)	23-30	69	36.5
■ Growth opportunities	Poor (<50%)	3-7	32	16.9
	Fair (50%-75%)	8-11	65	34.4
	Good (>75%)	12-15	92	48.7
■ Supervisor support	Poor (<50%)	3-7	33	17.5
	Fair (50%-75%)	8-11	49	25.9
	Good (>75%)	12-15	107	56.6
■ Job control	Poor (<50%)	10-24	52	27.5
	Fair (50%-75%)	25-37	70	37.0
	Good (>75%)	38-50	67	35.4

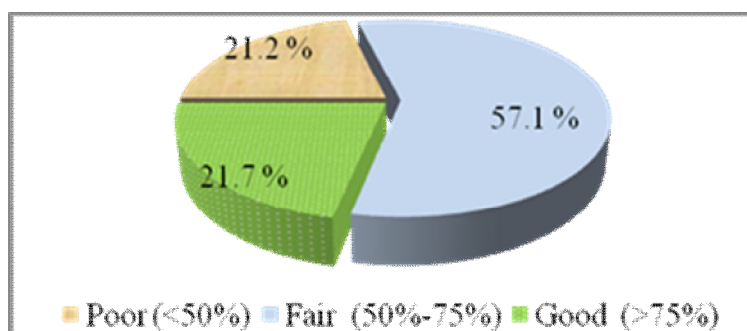


Figure (2): Total levels of job resources as perceived by the studied nurses (n=189)

Table (6): Mean percentages of job embeddedness as perceived by the studied nurses (n=189)

Job embeddedness domains	No of items	Min - Max	Mean±SD	Mean percentages
■ Link to organization	7	7.0-35.0	19.94±4.85	56.97
■ Fit to organization	7	7.0-35.0	21.67±6.02	61.91
■ Organization related sacrifice	9	9.0-44.0	25.29±8.48	56.2
<b>Overall Job embeddedness</b>	23	27.0-101.0	66.90±17.27	58.17

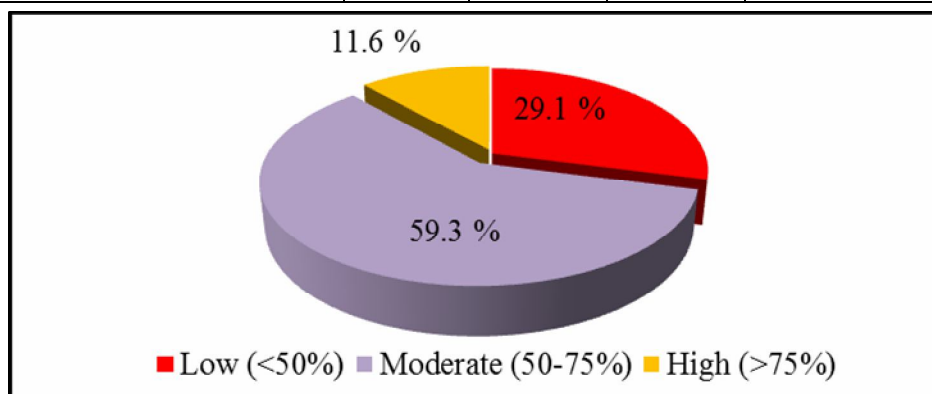


Figure (3) Total levels of job embeddedness as perceived by the studied nurses (n=189)

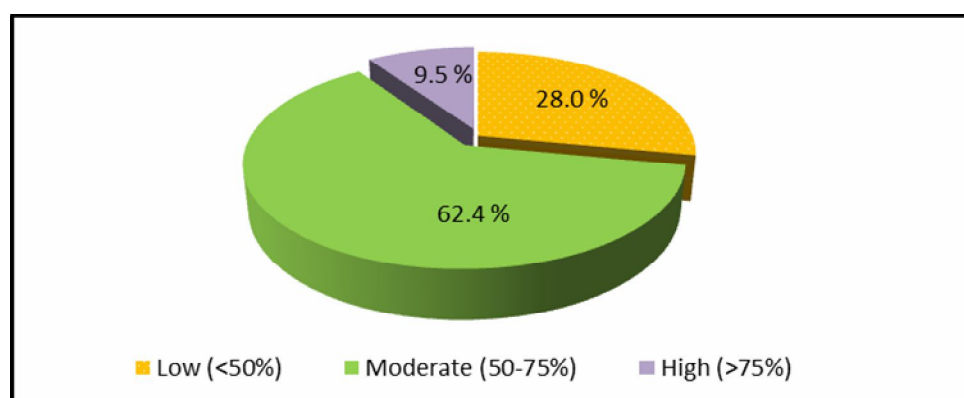


Figure (4): Total levels of nurses' retention at their workplace (n=189)



**Table (7): Relationship between total job demands, job resources, job embeddedness and nurses' retention as perceived by the studied nurses (n=189)**

	Total job embeddedness scores		Total retention scores	
	r	p	r	p
• Total job demands scores	0.31	<b>0.000**</b>	0.25	<b>0.001**</b>
• Total job resources scores	0.85	<b>0.000**</b>	0.59	<b>0.000**</b>
• Total retention scores	0.68	<b>0.000**</b>	1	

\*\* Highly statistically significant ( $p \leq 0.01$ )

**Discussion**

Nursing constitutes the core of a compassionate science, with nurses serving as the frontline healthcare practitioners responsible for administering highly individualized care to diverse recipients of services. The work environment of nurses within hospital settings is subject to a multitude of influences, such as the volume of tasks assigned to them, the manner in which they are overseen by their superiors, and their professional dynamics within multidisciplinary healthcare groups and in engaging with service recipients (Shdaifat, Al-Shdayfat, & Al-Ansari, 2023).

The Intensive Care Unit (ICU) constitutes a specialized division within a healthcare facility dedicated to delivering thorough and uninterrupted medical attention to individuals experiencing severe illness. Staff nurse face a high level of stress and strain due to the nature of their employment in ICUs (Dewi et al., 2019 and Salehi et al, 2020). Nurses employed within ICU exhibit a higher propensity to resign from their positions, primarily due to the challenging nature of the work environment. In addition, the job of nurses is crucial to providing high-quality healthcare, particularly in ICUs (Almenyan et al., 2021).

Finding of the study indicated the highest mean percentage of nurses' perception of job demand was related to working very fast and require excessive amount of effort. This result is consistent with Elnady, Abdelaziz Omar & Abdelrhman (2023) results who pointed to nurses have been increased their workload. As well as Jalilian, (2019) the study revealed a notably higher mean percentage of job demands as reported by the participating nurses. Additionally, our findings align with the research conducted by Elsayed, (2022) who revealed that the highest mean score and percentage of job demands was for work load. As well as this finding is supported by the result of Ahmed & Abdelghani, (2021) and Gabr, & El-Shaer, (2013) who stated workload had the highest

mean percentages while the least was for job insecurity.

The present investigation's findings showed the majority of studied nurses have the moderate level of job demand in ICU at Pediatric Hospital. This may be due to their job requires working in intensive care units require working with full mind and work very fast with full concentration to save life and give comprehensive care to patient, also require excessive amount and quantity of work with critically ill patients. This result is matched with Sivarajan, Varma, Narzary & Siju, (2023) results, who affirmed that nurses reported moderate level of job demands. As well as findings is supported by Elnady, Abdelaziz Omar & Abdelrhman (2023) results who pointed to nurses have been at the forefront of providing essential care to patients, which has significantly increased their workload and they must constantly prioritize their own safety while providing care to patients.

The current study's findings revealed that three quarter of nurses reported a moderate level of job insecurity. This may be due to they think that will be able to continue in their working place and they self-assurance in their work environment and internal motivation that motivates and inspires them to keep their jobs, the present finding is inconsistent with the results of Ebrahim et al., (2023) who discovered that a majority of head nurses had a low level of job insecurity. and Sulaiman, Alfuqaha, Shaath, Alkurdi & Almomani (2021) who found overall levels of job security were high. As well as Saquib, Taleb, AlMeimar, Alhomaidean & Al-Mohaimed, (2020) they found that less than one quarter of nurses suffer from job insecurity. While the present results disagreed with the result of Chen & Eyoun (2021) found the majority of nurses suffer from job insecurity and revealed that they are concerned about their ability to save their jobs.

The results of the present study revealed the majority of the studied nurses have poor level of organizational support at the pediatric hospital's ICU. This may be due to not sufficient of recognition and rewarded fairly from organization to all staff nurses. The results of the current study are congruent with **Dan et al., (2022)** result who reports of abusive behavior by bosses during the epidemic, a lack of organizational support, and the resilience and leadership of serial mediation role were made.

Finding of the present study is contradicted with the result of **Fan, Tang, Chen, & Sun, (2022)** who found high level of organization support. Also, inconsistency with result of **Labrague & Santos, (2020)** they discovered high level of organizational support for nurses. In addition, **Tang et al., (2023)** result they found moderate level of organizational support toward China's nurses. Also, **Abdel Azize, Abed & Bayoumy, (2023)** they found moderate level of job support among studied nurses. The atmosphere and setting of Egyptian hospitals, which have demonstrated a greater susceptibility to organizational injustice due to a lack of nurses, work overload, and the personal attitudes and behaviors of nurse managers, may be the source of this outcome.

Furthermore, study done by **Lusine et al., (2020)** found nurse practitioners in primary care practices with higher levels of organizational support are more likely to be satisfied with their jobs, have less intent to leave their jobs, and report better quality of care. They suggest higher levels of organizational support are associated with higher job satisfaction, lower intent to leave, and better quality of care among nurse practitioners in primary care practices. Similarly, **Li-Hui et al., (2021)** results who found higher levels of organizational support in the workplace.

The results of this study's findings showed that the majority of the studied nurses have a fair level of job resources in ICU at Pediatric Hospital. This may be due to support from supervisor and growth opportunity in form of considers nurses goals and values, cares about their well-being and opinion and listen to their complaint does not ignore it. This finding in the same view of **Elsayed, (2022)** result who found of job resources had the fair level as perceived by studied nurses. This is the same line with **Rattrie, Kittler, & Paul, (2020)** result who noted how crucial it is to stimulate the motivation process by fostering nurses' motivation and job engagement, which in turn helps them reach their objectives, satiate their desire for autonomy, and motivates them to put more effort into their tasks.

Findings of the current study found most of the studied nurses had moderate level of job embeddedness. This may be due to the highest percentage was found related to moderate level for link to the organization and also most of the studied nurses reported that they are difficult for them to leave this organization. This is agreed with result of **Elsabagy, Ibrahim, & Awad, (2019)** support this study and found that more than half of the nurses they surveyed showed a moderate level of total job embeddedness. As the same agreed with **Kim, & Park, (2023)** result who reported the same results that more than half of nurses were reported moderate of total level of job embeddedness.

On the opposite side, findings of the present study are disagreed with **Mahmoud, & Obied, (2022)** who revealed that a high percent of intensive care nurses had a low level of overall job embeddedness. and **Zohourparvaz & Vagharseyyedin, (2023)** reported the highest of total level of job embeddedness. The current findings were compatible with **Mohamed & Ali (2020)** who showed the majority of Minia general hospital staff nurses showed low responses toward JE dimensions. Contradictory to this finding the study of **Goliroshan1 et al., (2021)** found high levels of job embeddedness among nurses. In addition, **Fan et al., (2023)** they confirmed the job embeddedness subscale of senior nurses was lower level.

A functioning health care system depends on nurses, who are vital to the organizational coordination of care, productivity, and patient outcomes (**Diosdado, 2023**). Work satisfaction, the work environment, organizational support, possibilities for professional growth, pay and benefits, work-life balance, and the general caliber of the workplace all have an impact on nurses retention. When nurses are satisfied with their jobs and feeling that their organization is behind them, nurses are more likely to stick with their jobs for a longer duration (**Lee, Lee, Chung, & Ha, 2023**).

Findings of the present study related to nurse retention revealed that most perceptions of studied nurses as the moderate level. This may be contributed to most of nurses reported they planned to be with the organization quite a while. This may be contributed to nurse perceive high level of support, recognition the nursing profession often faces workforce challenges such as high workload, by gives opportunities for organizational support and likely to have higher levels of retention, career progression or professional development. In agreement with **Macintyre, Brown & Schults, (2022)** result who found overall nurses have moderate level of retention.

Finding of the present study is inconsistent with result of **Joseph, Jacob, Lam & Rahman, (2022)** who mentioned about one of participant have quarter high level of overall retention. As well as results of the present investigation disagreed with a study done by **Al Muharraq, Baker & Alallah, (2022)** who found that less than a third of participants had a moderate level of nurse retention.

The current study's findings showed the most studied nurses showed there was highly statistically significant relationship between total job demands and total job embeddedness. This may be contributed to some nurses may perceive high job demands as stimulating and challenging, leading to increase job embeddedness other may have effective coping strategies in place to manage job demands which can contribute to their overall job embeddedness. In agreement with **Khadhuri & Eid (2017)** who congruent with present study and stated job embeddedness had positive correlation with combined job demands. In contrary, **Fasbender, Van der Heijden & Grimshaw, (2019)** submitted a negative relation between demands and job embeddedness. Also, **Ree, & wig, (2020)** revealed that, job demands did not correlate significantly with job embeddedness.

The presently study's findings revealed that the most studied nurses showed there was highly statistically significant relationship between total job resources and total job embeddedness. This may be contributed to supportive work environment this support can include access to necessary equipment and technology, training and development opportunities, and supportive relationship with colleagues, when nurses have the necessary resources to enhance their skills and exercise autonomy it contributes to their sense of competence in turn strengthens their attachment and commitment leading to greater job embeddedness. This finding is supported by **Dahri et al., (2021)** and **Mukaihata, Fujimoto, & Greiner (2020)** they stated that, significant positive correlation was found between total job embeddedness and job resources. In contrast, **Khadhuri & Eid (2017)** stated that job embeddedness had a moderate negative correlation with the job resources.

This study's findings showed that the most studied nurses showed that, there was highly statistically significant relationship between total job demands and total job retention. This may be contributed to nurses feel adequately supported in managing high job demands also nurses have challenged in their roles may perceive their work as more meaningful and rewarding leading to increase job satisfaction, commitment to patient care.

Consistent with these findings, the results by **Morin et al., (2023)** who confirmed a positive highly statistically significant relation between the job demands with nurses' retention. As well as **Min & Hong (2023)** stated the same positive relation between the job demands and nurses' retention. Also, according to **Barkhuizen & Gumede (2021)** confirmed a positive relationship between job demands and nurses' retention.

In addition, finding in the present revealed that the most studied nurses were showed highly statistically significant relationship between total job resources and total nurse's retention. This may be due to when nurses have the necessary resources such as appropriate staffing levels, supportive policies and efficient work process it help them maintain a healthier work life balance, supportive work environment foster a sense of belonging, trust and loyalty which increase their intention to the organization. In line with the current results by **de Vries et al., (2023)** who discovered that there was significant relationship between total job resources and total nurses' retention. On the other hand, the results by **Cho & Wee in (2023)** states high statistically negative relation.

Finding of the results of the current investigation show a highly statistically significant relationship between total job embeddedness and total retention. This suggests that nurses who feel a strong connection to their organization and are dedicated to their work have a higher chance of staying with the organization in the long run. These results come in line with the results by **Karatepe, Yavas, Babakus, & Deitz, (2018)** who confirmed highly statistically significant relationship between total job embeddedness and total retention.

### Limitations

This study involved a small size convenience sample and it was only conducted in five ICUs of pediatric hospital. These factors limit the generalizability of the research findings.

### Conclusion and Recommendation:

Based on its findings, the current study came to the conclusion that the majority of studied nurses have the moderate level of job demand, job embeddedness and retention at Intensive Care Unit at Pediatric Hospital. As well more than half represent fair level of job resources. In addition, there was highly statistically significant correlation between total job demands, total job resources with total job embeddedness and total nurses' retention at work place. When improve job demand and resources can affect the job embeddedness and

nurses' retention. As well job embeddedness is a predictor of nurses' job retention.

In light of the study's results and data analysis, the following recommendations can be proposed as;

1. Ensuring of organizational policymaking to provide nurses with adequate job resources and support systems to manage job demand pressures
2. Encouraging leadership initiatives to empower nurses by granting individuals autonomy and authority in decision-making processes.
3. Implementing mechanism to assess, monitor and manage workload and time pressure,
4. Creating a supportive work environment can help alleviate the impact of workload and time pressure on nurses
5. Conducting educational programs nurses can benefit from learning about the origins of conflict and strategies for its prevention.
6. Encouraging ICU nurses to pursue self-learning in order to foster critical thinking and the application of scientific techniques for conflict resolution.
7. Implementing recognition and reward system to acknowledge the contributions of ICU staff.
8. Developing standards for placing nurse in roles that are appropriate for their competencies in order to increase their embeddedness.

#### For future research:

1. Examining job embeddedness characteristics in nurses as a predictor of organizational commitment.
2. Exploring the role of technological innovations in supporting nurse job embeddedness and retention in the ICU.
3. Comparing nurses' job embeddedness and retention in the ICU with other healthcare setting or specialties.

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The authors declared no potential conflicts of interest regarding the research or publication of the article.

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