

▪ **Basic Research**

Job Demands, Resources and Its Relation to Nurses' Professional Quality of Life and Job Crafting During COVID-19 Pandemic

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Abstract

Background: During the COVID-19 pandemic to achieve better alignment with job demands, resources, and nurses' talents, it is being done by improving nurses' professional quality of life and modifying job tasks, fostering relationships with co-workers, and reevaluating the value of nurses' work; is a process known as job crafting. **The research aimed to** assess job demands, resources and its relation to nurses' professional quality of life and job crafting during COVID-19 pandemic. **Research design:** Descriptive correlational design was applied. **Setting:** The study was carried out at Mallawi General Hospital in Minya Governorate, Egypt. **Sample:** Comprised of a purposive sampling technique, employing a non-probability approach, was employed to select participants for this study. The total population consisted of 350 nurses, from which a sample size of 94 staff nurses was chosen based on predefined units and strict inclusion criteria. **Instruments:** four instruments were utilized; Job Demands Questionnaire, Job Resources Questionnaire, Professional Quality of Life (ProQol) Scale, and Job Crafting Questionnaire (JCQ). **The results:** The study revealed that less than three-quarters (70.1%) and more than two-thirds (69.6%) of nurses had a high perceived level regarding job demands and job resources respectively. Also, around half (48.8%) of nurses had a moderate professional quality of life level, and around two-thirds, (63.6%) of them had a high level of job crafting behaviors. **Conclusion:** The research found that, there was a highly statistically significant positive correlation revealed between nurses' job demands, resources, and professional quality of life, as well as job crafting. **Recommendations:** The study recommended that nurse managers should implement mechanisms to regularly monitor and evaluate job demands and resources and adjust policies and practices accordingly to enhance nurses' professional quality of work life.

Keywords: Crafting, COVID-19, Demands, Job Resources, Nurses' professional quality of Life, Pandemic

Introduction

The pandemic of COVID-19 has had a significant impact on healthcare professionals worldwide, especially nurses who are at the forefront of patient care. The unprecedented challenges, demands, and resources posed by the pandemic have significantly affected nurses' professional quality of life and their capacity to adapt with the evolving circumstances brought about by the COVID-19 pandemic, nurses have also shown their resilience and adaptability through job crafting (**Shah et al., 2022**).

Job demands refer to the physical, emotional, and cognitive requirements of the nursing profession that require sustained effort and energy expenditure from nurses. The COVID-19 pandemic has escalated these demands for nurses, including increased workload, exposure to high-risk situations, the need for rapid decision-making, and emotional strain due to the overwhelming number of patients and the constant fear of contracting the virus. These intensified demands can have detrimental effects on nurses' professional quality of life (**Schaufeli, 2017**).

Job demands can include job insecurity, workload, role ambiguity, and role conflict. Job insecurity in nursing refers to the threat of job loss due to budget constraints, organizational restructuring, or healthcare policy changes (**Adil & Baig, 2018**). Workload means the amount and intensity of work that nurses are expected to perform within a given period. Nurses face heavy workloads, including understaffing, increased patient acuity, and administrative tasks, which can cause fatigue, burnout, and compromised patient care quality (**Cho et al., 2020**).

Role ambiguity arises when nurses are unclear about their roles, responsibilities, and expectations, leading to stress, frustration, and reduced performance. Also, role conflict arises when nurses face competing demands or incompatible demands, resulting in job dissatisfaction, emotional exhaustion, and difficulties maintaining work-life balance. Factors like poor communication and conflicting instructions can contribute to these issues (**Cengiz et al., 2021**).

These dimensions of job demands have significant implications for nurses' well-being. So, Organizations and healthcare systems must provide supportive environments, clear role definitions, manageable workloads, and professional development opportunities to improve patient care quality and enhance nurses' professional growth. On the other hand, job resources for nurses include support, autonomy, skill development, training, positive feedback, and a supportive work environment, enabling them to accomplish job objectives, decrease demands, and stimulate personal development. (**Hu et al., 2022**).

Job resources are composed of job control, organizational support, coaching from supervisors, job feedback, autonomy, and development opportunities. Job control is the autonomy and decision-making authority nurses have over their work, affecting job satisfaction and stress reduction. Organizational support includes resources and assistance

for effective job performance, such as tools, technology, training, and policies promoting well-being and work-life balance (**Nordhall et al., 2020**).

Support and coaching from supervisors focus on the guidance, mentorship, and skill development opportunities, enhancing nurses' performance and overall well-being. Job feedback refers to the information nurses receive regarding their performance, and it is essential for nurses' growth, motivation, and learning. It provides positive reinforcement and constructive criticism, enabling them to improve their performance (**De Leon, 2019**).

Autonomy is the degree of freedom and independence nurses must carry out their work. It allows nurses to make decisions without constant supervision, leads to increased job satisfaction, creativity, and ownership (**Gardner, 2020**). Development opportunities, such as training programs and job rotations, help nurses acquire new skills and knowledge. Job resources, such as personal protective equipment (PPE), infection control training, and organizational support, are crucial for nurses during the pandemic. Balancing job demands and resources can create healthier work environments, improve patient outcomes, increase retention rates, and enhance nurses' professional quality of life (**Rashmi & Kataria, 2020**).

Professional quality of life refers to the overall well-being and satisfaction that individuals experience in their professional roles. When it comes to nurses, professional quality of life is of utmost importance due to the demanding nature of their work and the potential impact it can have on their emotional and psychological well-being. One way to assess the professional quality of life for nurses is by examining its dimensions, which include compassion satisfaction (CS), burnout, and secondary traumatic stress; the two later dimensions' measure compassion fatigue (CF). (**Monroe et al., 2020**).

Compassion satisfaction refers to the fulfillment and sense of reward that nurses derive from their ability to do a positive change in the lives of their patients. It involves feelings of happiness, accomplishment, and satisfaction resulting from providing compassionate care and witnessing the recovery and well-being of patients. While compassion fatigue is the emotional, physical, and spiritual exhaustion nurses may experience due to prolonged exposure to patient suffering. This can result in decreased empathy, irritability, helplessness, and reduced patient connection (**Yu et al., 2021**).

Compassion fatigue included burnout and secondary traumatic stress causing chronic physical and emotional tiredness and decreased personal accomplishment. Nurses may become detached from their work and overwhelmed by demands. Secondary traumatic stress, also known as vicarious trauma, arises from witnessing and empathizing with patients' traumatic experiences (**Pang, 2020**).

In conclusion, professional quality of life is crucial for nurses as it directly influences their job satisfaction, burnout prevention, the quality of care they provide to patients, maintaining a healthy work-life balance, and their overall health and well-being are enhanced. This can

include implementing self-care strategies, offering counseling and mental health services, fostering a supportive work environment, encouraging work-life balance, and promoting a culture of recognition and appreciation for nurses' efforts. This, in turn, leads to higher retention rates, enhancing nurses to self-initiated modifications that make specific aspects of their jobs, without requiring their whole reform this is known as job crafting (**Niu, 2022**). Job crafting refers to the proactive changes nurses make to their work environment and tasks to align them with their preferences, strengths, and goals. Nurses have engaged in various forms of job crafting during the pandemic, such as seeking new opportunities for learning and growth, redefining their roles, and fostering supportive relationships with colleagues. Job crafting can empower nurses, providing them with a sense of control and ownership over their work, and ultimately contributing to their professional quality of life. (**Ingusci et al., 2021**).

Three dimensions of job crafting are particularly relevant to nurses; task crafting, cognitive crafting, and relational crafting. Task crafting involves altering nurses' job tasks and responsibilities to meet COVID-19 demands. This may involve new roles, such as administering tests, contact tracing, or providing telehealth services. Nurses can also adjust task boundaries, seeking fulfilling opportunities or delegating less meaningful tasks. Task crafting provides autonomy, control, and motivation, ultimately enhancing job satisfaction (**Petrou & Xanthopoulou, 2021**).

Cognitive crafting helps nurses reframe their mindset and find purpose in their work despite COVID-19 stressors. By centering on positive aspects like patient impact, camaraderie, and personal growth, nurses can enhance their well-being and psychological resilience. Relational crafting in the workplace is crucial for nurses during challenging times like COVID-19, focusing on building strong connections with colleagues, supervisors, and patients. This involves acts of kindness, support, open communication, and fostering a sense of community (**Wijngaards et al., 2022**).

Nurses face COVID-19 challenges, requiring job crafting to nurture positive relationships, strengthen social support, and promote resilience, in summary, job crafting can be a helpful way for nurses to cope with the challenges of the COVID-19 pandemic. By actively changing their jobs to better fit their own needs and preferences, nurses can improve their job satisfaction, reduce stress, and be more effective in their work (**Geldenhuis et al., 2021**).

Conceptual Framework and Theoretical Premises:

The study relied on two theoretical foundations: Job demands-resources (JDR) theory, and Stamm's theoretical framework of ProQOL. Concerning JDR theory, demands encompass the physical, psychological, organizational, and social aspects of a nurse's job that require exertion of effort, while job resources refer to elements that alleviate demands, facilitate goal achievement, or foster personal growth. The interplay of demands and resources

triggers two simultaneous processes, namely burnout and engagement (, 2017). As advised that, nurses, motivated or burned out, may engage in job crafting as a means to expand their resources or reduce their demands.

According to Stamm's theoretical framework of ProQOL is a concept that describes how people feel about their employment as assistants and helpers. Those in the helping professions, like nurses, may be asked to respond to emergencies on a local, regional, national, or even international level. ProQOL's overarching notion has two components: CF is a negative aspect, while CS is a positive aspect. These aspects of the job, both beneficial and harmful, affect ProQOL (Stamm, 2012).

Magnitude of the research:

Since the COVID-19 epidemic caused in 350,212 fatalities and 5,555,737 cases worldwide as of May 27, 2020 (European Centre for Disease Prevention and Control, 2020), and based on a published national governmental report Egypt was ranked 158th country in the world until the end of the second wave, as the number of people infected with COVID-19 virus reached about 201 thousand at the end of the second wave, the study indicated that, Minya governorate was one of the highest recorded growth rate of infected patients during the second week, then the rate recorded a sudden decline with the stability of the decline until August 18 /2020 (Al-Ahram,2020).

Healthcare organizations faced persistent challenges in their survival. These challenges necessitated the presence of nurses capable of shaping their roles to gain control over their work lives. It was crucial to proactively introduce administrative regulations that fostered a positive and satisfying work environment and encouraged job crafting. Job crafting empowers nurses to design occupational frameworks by modifying the physical, cognitive, and relational aspects of their work activities (Blanc *et al.*, 2017).

The effectiveness of nurses' job crafting appears to stem from its ability to enhance job resources over time, enabling nurses to achieve their work-related objectives. This, in turn, has a positive impact on nurses' job attitudes and performance levels, empowering them to fulfill their responsibilities and roles with excellence. Furthermore, job resources serve as crucial predictors of favorable outcomes. Given the circumstances of the COVID-19 pandemic, researchers sought to investigate whether job demand and resources were affected and, if so, how it influenced job crafting.

Aim of the research

The current study aimed to assess job demands, resources and its relation to nurses' professional quality of life and job crafting during COVID-19 pandemic.

Research questions

The following research inquiries are put out to help the study's goal be realized:

1. What is the level of job demands as perceived by nurses during COVID-19 pandemic?

2. What is the level of job resources from nurses' perspectives during COVID-19 pandemic?
- 3-What are the levels of the nurses' professional quality of life during the COVID-19 pandemic?
- 4- what is the extent which nurses are engaged in job crafting during COVID-19 pandemic?
5. Is there a relation between the nurses' perception of job demands, resources, and the professional quality of their lives and job crafting during COVID-19 pandemic?

Method

Research design

To accomplish the existing research goal, a descriptive correlational design was used in the research process.

Research that is descriptive aims to give a picture of the current situation. Finding relationships between variables and using that information to anticipate future events is known as correlational study or research (**Walinga, 2019**).

Research setting

The current research was done at Mallawi General Hospital in Minya Governorate, Egypt, which has 151 beds overall (reflecting upper Egypt) and includes multi-specialty departments. This hospital was chosen because, during the second wave of Covid 19, it was converted as many hospitals as a minister of health strategy to receive patients infected with Covid-19, and some of its departments were converted to isolated areas, and also all nurses working in inpatient departments and clinics were distributed to work with patients in rotation, and the nurses were rotated between short and long shifts, the number of long shifts inside the hospital was increased for all nurses.

Sample:

The purposive sampling technique of non-probability was utilized in this study, involving a total of 350 nurses. The sample size consisted of 94 staff nurses, which were selected from various hospital departments. Specifically, there were 20 staff nurses from ICUs, 20 from Outpatient Rooms, 20 from Pediatric departments, and 34 from in-patient departments during the second wave of COVID-19. Inclusion criteria were applied to both male and female nurses who had either worked with infected patients or were currently working with them. Exclusion criteria encompassed nurses who have work experienced less than 5 years old and those who declined to participate in the research.

Instruments for data collection

To assemble the data four instruments were used as following:

I. Job Demands Questionnaire. It included two parts:

Part I: Personal and work characteristics of the nurses; the researchers designed a form to gather data on the nurses' age, sex, marital status, educational qualifications, years

of nursing experience, workplace, shift hours, and any previous training courses attended regarding COVID-19.

Part II: It was developed by **Gabr & El-Shaer, (2013)** and modified by researchers aims to assess the job demands experienced by nurses in their workplace. It comprised of 30 items categorized into four groups: job insecurity (10 items), workload (9 items), role ambiguity (6 items), and role conflict (5 items). A Likert-type scale ranging from 1 to 5 was used for assessment, with 1 indicating "strongly disagree" and 5 indicating "strongly agree." The total score ranges from 30 to 150, with a cutoff point set at 60% (equivalent to 90 points). Nurses' perceived levels of job demands were classified as follows: High ($\geq 75\%$, corresponding to ≥ 45 points), Moderate (ranging from 60% to $< 75\%$, i.e., 90-112 points), and Low ($< 60\%$, i.e., < 90 points).

II. Job Resources Questionnaire.

It was adapted from **Lequeurre et al., (2013)** and subsequent modifications by researchers, was designed to evaluate the job resources available to nurses that facilitate for achieving their work objectives and foster personal growth. The questionnaire consists of 37 items categorized into six subscales representing different job resources: job control (10 items), organizational support (8 items), support and coaching from supervisors (7 items), job feedback (5 items), autonomy (4 items), and development opportunities (3 items). Participants responded to each item on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total score ranged from 37 to 185, with a cutoff point set at 60% or 111 points. Nurses' perceived levels of job resources were categorized as follows: High ($\geq 75\%$ or ≥ 139 points), Moderate (ranging from 60% to less than 75%, equivalent to 111-138 points), and Low ($< 60\%$ or < 111 points).

III. Professional Quality of Life (ProQol) Scale.

This scale, version 5, was derived from **Stamm's** work in **2012** and translated into Arabic by the researchers to assess the levels of professional quality of life among nurses during the COVID-19 pandemic. This scale consists of 30 items categorized into three dimensions: Compassion Satisfaction (CS), Burnout, and Secondary Traumatic Stress. The latter two dimensions collectively measure Compassion Fatigue (CF). Each dimension comprises 10 items. Participants were asked to rate their responses on a five-point Likert scale, ranging from "1" for strongly disagree to "5" for strongly agree. Negative statements were reversed. The overall score ranged from 30 to 150, besides a cutoff point set at 60% or 90 points. Based on this classification, nurses' ProQol levels were categorized as follows: Low (if the percentage was less than 60% or less than 90 points), Moderate (if the percentage ranged from 60% to less than 75%, corresponding to 90 to 112 points), and High (if the percentage was 75% or higher, equivalent to 113 points or more).

IV. Job Crafting Questionnaire (JCQ).

It was developed by **Slemp & Vella-Brodrick** in **2013** as a tool to assess the extent to which nurses engage in job-crafting behaviors during the COVID-19 pandemic. The questionnaire

consists of 15 items divided into three dimensions: Task crafting, cognitive crafting, and relational crafting (5) elements per each dimension. A five-point rating scale was used by the participants to answer to the items, ranging from never (1) to always (5). To obtain the overall score, the responses were summed up, resulting in a range of 15 to 75. The cutoff point for job crafting behaviors was set at 60% or 45 points. For scoring each dimension were summed up and converted into percentage scores. If the total percentage score was $\geq 75\%$, equivalent to ≥ 56 points, it indicated a high level of job crafting behaviors. A moderate level of job crafting behaviors fell within the range of 60 to 75%, corresponding to scores between 45 and 55 points. Scores below 60% or less than 45 points indicated a low level of job crafting behaviors.

Validity:

The study instruments' content validity was confirmed by an expert panel of five academics (Assistant Professors) from Nursing Administration three from Benha University, and two from Fayoum University, Faculty of Nursing whose reviewing and testing the content validity of the four double translation English-Arabic-English instruments. To confirm the study's validity, their recommendations are considered.

Administrative design

Before starting the study, permission from the Director of the Minya Hospital and the Dean of the Nursing Faculty at Minya University were requested in writing to gather the necessary official approval for data collection to carry out the study at the chosen units. They took solace in the possibility that the data had been consistently secured.

Pilot Study

A pilot study was performed on a sample of (10%) 9 nurses was done by researchers aiming to seek clarification on certain aspects without necessitating any modifications to the items. The study centered around the nurses, who served as the primary subjects, and examined the range of time taken to complete the questionnaires, which varied from 20 to 25 minutes.

Reliability

The reliability of the instruments was verified by using Cronbach's Coefficient Alpha (test-retest reliability) of the job demands questionnaire which was (0.91), the job resources questionnaire was (0.85), the professional quality of life (ProQol) scale was (0.89), and the job crafting questionnaire was (0.94) this revealed that questionnaires were highly reliable.

Data Collection Procedure:

The researchers who were available to respond, explain, and answer nurses' concerns and questions collected the data. The data collection process lasted approximately two months, starting from February, and ending in March 2021. The researchers scheduled visits with the head nurses based on their specific tasks and workload. The meetings commenced two or three hours after the beginning of the nurses' shifts to ensure uninterrupted patient care. During these meetings, the researchers introduced themselves to the nurses and

provided an overview of the study's purpose, nature, and questionnaire completion method. This process was conducted individually, with the researchers distributing the questionnaires to the participating nurses during their designated work times, as determined by the head nurse of each unit, considering the specific tasks and workload. The nurses took approximately 20 to 25 minutes to complete the questionnaire. Data collection occurred three days a week, with the researchers present to address any ambiguities. On average, between 3 and 4 questionnaire sheets were filled out per week.

Furthermore, before commencing data collection, consent was obtained from the Institutional Research Board (IRB) of the Faculty of Nursing and the respective hospitals. The nurses were provided with a comprehensive understanding of the study's aim and importance. The researchers emphasized that participation was voluntary, allowing them to withdraw from the study at any time without facing any consequences. Measures were taken to guarantee participant confidentiality, assuring nurses that only the research results would be utilized and shared, with access restricted solely to the researchers.

Data analysis:

The entry and statistical of data analysis were conducted utilizing the computer software known as the Statistical Package for the Social Sciences (SPSS), version 26. Appropriate descriptive statistics were employed, including frequencies and percentages for qualitative variables, as well as means and standard deviations for quantitative variables. Significance tests, such as independent t-tests and ANOVA tests, were utilized to examine the correlation between two continuous variables through the utilization of the Pearson correlation coefficient. A significance level of $p \leq 0.05$ was deemed significant, while a highly significant level was determined as $p \leq 0.001$.

Results

Table (1): Shows that the studied sample consisted of 94 nurses the majority (83.0%) of them aged range between 25 to less than 30 years with a mean age of 25.20 ± 3.9 years and nearly three-quarters (74.5%) of them were female. As far as their marital status nearly half (51.1%) of them were unmarried and the majority (84.0%) of them had an Associated Technical Nursing Diploma. As regards their years of experience, nearly three-quarters (74.5%) of nurses had their experience ranged from 10 to less than 15 years, with a mean experience of 9.40 ± 3.40 years. Also, more than one-third (36.1 %) of nurses' work in the inpatient unit, and the rest of them are equally distributed between ICU, Pediatric, and ER units. Finally, around two-thirds (63.8% & 68.1 %) of the nurses working from 10 to 15 shifts and had training courses about COVID-19.

Figure (1): Reveals that, less than three-quarters (70.1%) of nurses had a high job demand level while the lowest percentage (9.4%) of them had a low job demand level as perceived by nurses.

Table (2): Demonstrates that the total mean score for all dimensions of nurses' job demands was 128.63 ± 5.41 . The first ranking with the highest mean score of 42.07 ± 3.31 with a mean percent of 93.5% was related to the workload dimension. While the last ranking with the lowest mean score of 22.49 ± 2.90 with a mean percent of 75.0 % was related to the role ambiguity dimension.

Figure (2): Reveals that more than two-thirds (69.6%) of nurses had a moderate job resources level while the lowest percentage (5.0%) of them had a low job resources level from nurses' perspectives.

Table (3): Clarifies that the total mean score for all dimensions of nurses' job resources was 124.19 ± 8.24 . The first ranking with the highest mean score 42.75 ± 2.43 with a mean percent of 85.5% was related to the job control dimension. While the last ranking with the lowest mean score 19.80 ± 4.20 with a mean percent of 49.5% was related to the organizational support dimension.

Figure (3): Illustrates that around half (48.8%) of nurses had a moderate professional quality of life level while about one-fifth (20.5%) of them had a low professional quality of life level from nurses' perspectives.

Table (4): Indicates that the total mean score for all dimensions of nurses' professional quality of life was 92.28 ± 7.85 . The first ranking with the highest mean score 33.94 ± 6.27 with a mean percent of 67.9 % was related to the compassion satisfaction dimension. While the last ranking with the lowest mean score of 26.31 ± 3.81 with a mean percent of 52.6 % was related to the burnout dimension.

Figure (4): Clarifies that around two-thirds (63.6%) of nurses had a high level of job crafting behaviors while about the lowest percentage (10.1%) of them had a low level of job crafting behaviors as reported by nurses.

Table (5): Reveals that the total mean score for all dimensions of nurses' job crafting was 56.31 ± 6.25 . The first ranking with the highest mean score 21.97 ± 4.01 with a mean percent of 87.9 % was related to the cognitive crafting dimension. While the last ranking with the lowest mean score of 16.01 ± 3.21 with a mean percent of 64.0% was related to the relational crafting dimension.

Table (6): Demonstrates that there were highly statistically significant relations found between nurses' educational qualifications, years of experience, workplace, number of shifts and total job demands, resources, professional quality of life, and job crafting. Also, there were statistically significant positive relations between nurses' age, attended previous training courses about COVID-19, and their total job demands, resources, professional quality of life, and job crafting. Otherwise, no statistically significant relations were found between nurses' sex, marital status, and their total job demands, resources, professional quality of life, and job crafting.

Table (7): Illustrates that there was a highly statistically significant positive correlation

between nurses' job demands, resources, and professional quality of life, as well as job crafting ($p < 0.001$). Additionally, there was a statistically significant positive correlation between nurses' professional quality of life and job crafting ($p < 0.05$).

Table (1): Percentage distribution of personal and work characteristics among the studied nurses (n=94)

Personal and work characteristics		N.	%
Age (Years)	25- < 30	78	83.0
	30- < 35	14	14.9
	35- 40	2	2.1
	M±SD		25.20 ± 3.9 years
Sex	Male	24	25.5
	Female	70	74.5
Marital status	Married	46	48.9
	Unmarried	48	51.1
Educational qualifications	Nursing Diploma	6	6.4
	Associated Technical Nursing Diploma	79	84.0
	Bachelor of Nursing Science	9	9.6
Years of nursing experience	5 - < 10	70	74.5
	10- <15	13	13.8
	15- 20	11	11.7
	M±SD		9.40±3.40 years
Workplace	ER	20	21.3
	Pediatric	20	21.3
	ICU	20	21.3
	In-patient	34	36.1
Shift hours	10- 15	60	63.8
	16- 20	30	31.9
	More than 20 shifts	4	4.3
Attended previous training courses about COVID-19	Yes	64	68.1
	No	30	31.9

Figure (1): Total job demands levels as perceived by nurses during COVID-19

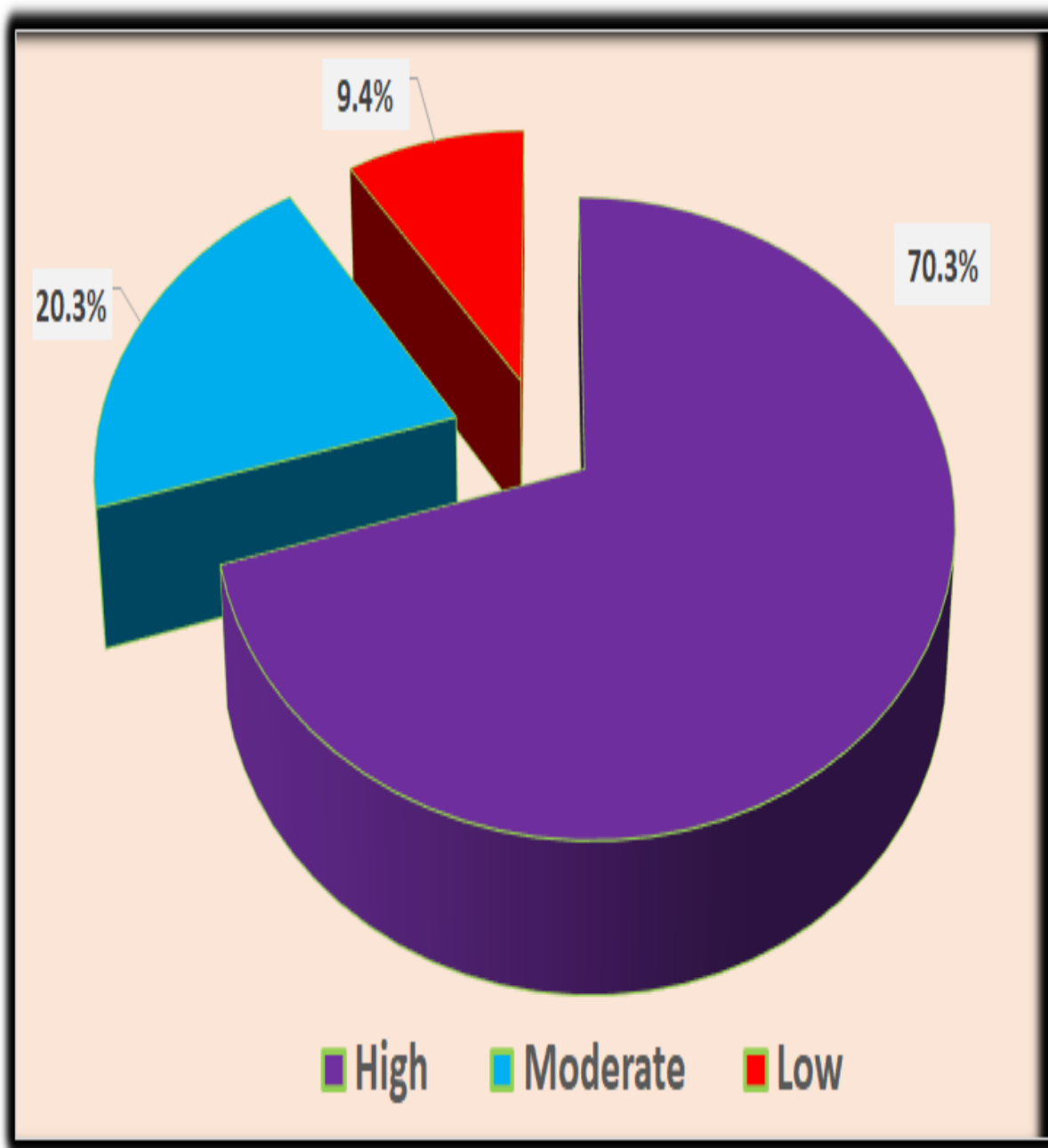


Table (2): Ranking with total mean and mean percentage of job demands as reported by nurses' (n=94)

Job Demands Dimensions	Maximum Score	M±SD	Mean%	Ranking
Job insecurity	50	43.45±2.51	86.9	2
Workload	45	42.07±3.31	93.5	1
Role ambiguity	30	22.49±2.90	75.0	4
Role conflict	25	20.62±1.34	82.5	3
Total Job Demands	150	128.63±5.41		

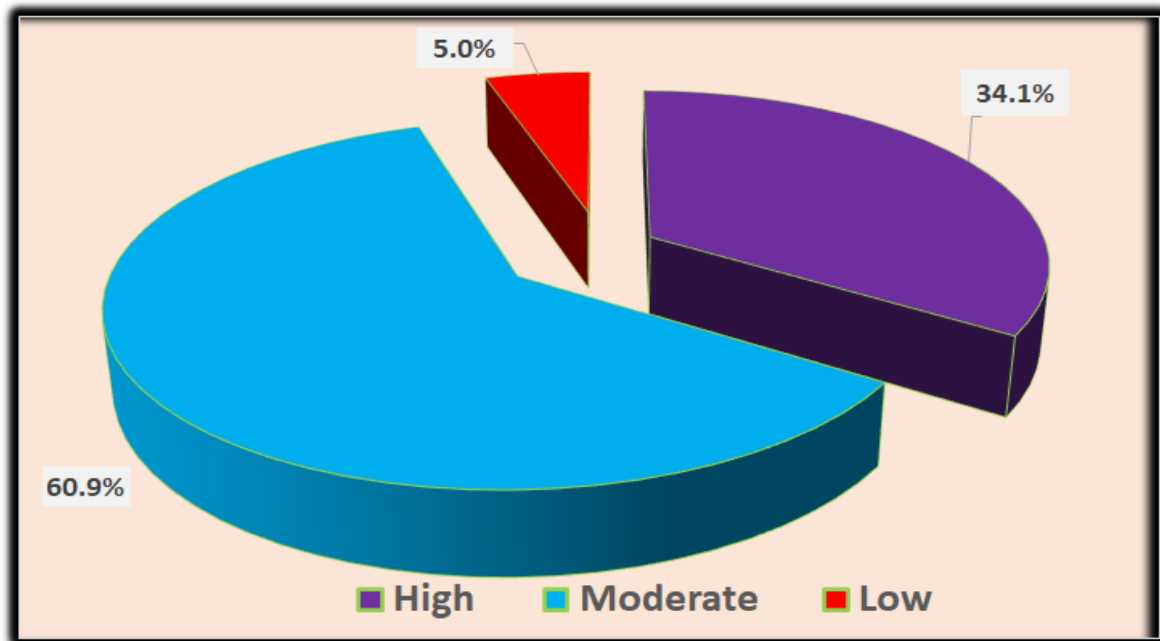
Figure (2): Total job resources levels as reported by nurses during COVID-19

Table (3): Ranking with total mean and mean percentage of job resources among nurses (n=94)

Job Resources Dimensions	Maximum Score	M±SD	Mean%	Ranking
Job control	50	42.75 ±2.43	85.5	1
Organizational support	40	19.80 ±4.20	49.5	6
Support & coaching from supervisors	35	19.12 ±3.05	54.6	5
Job feedback	25	16.45 ± 4.01	65.8	4
Autonomy	20	15.20 ± 3.82	76.0	2
Development opportunities	15	10.87 ± 4.09	72.5	3
Total Job Resources	185	124.19±8.24		

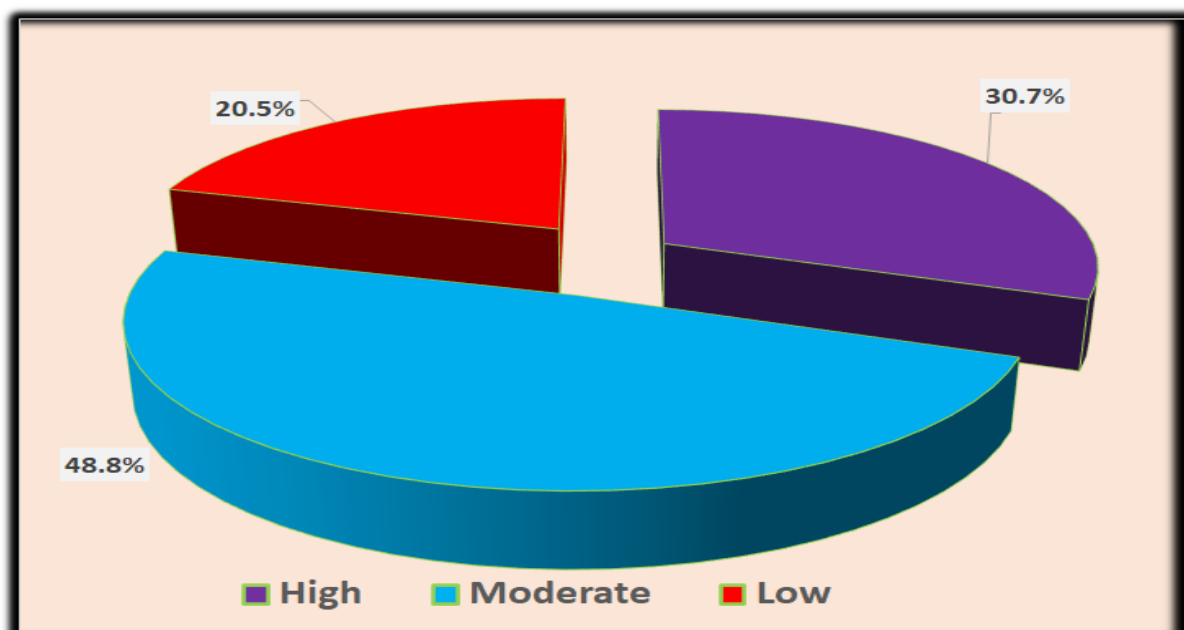
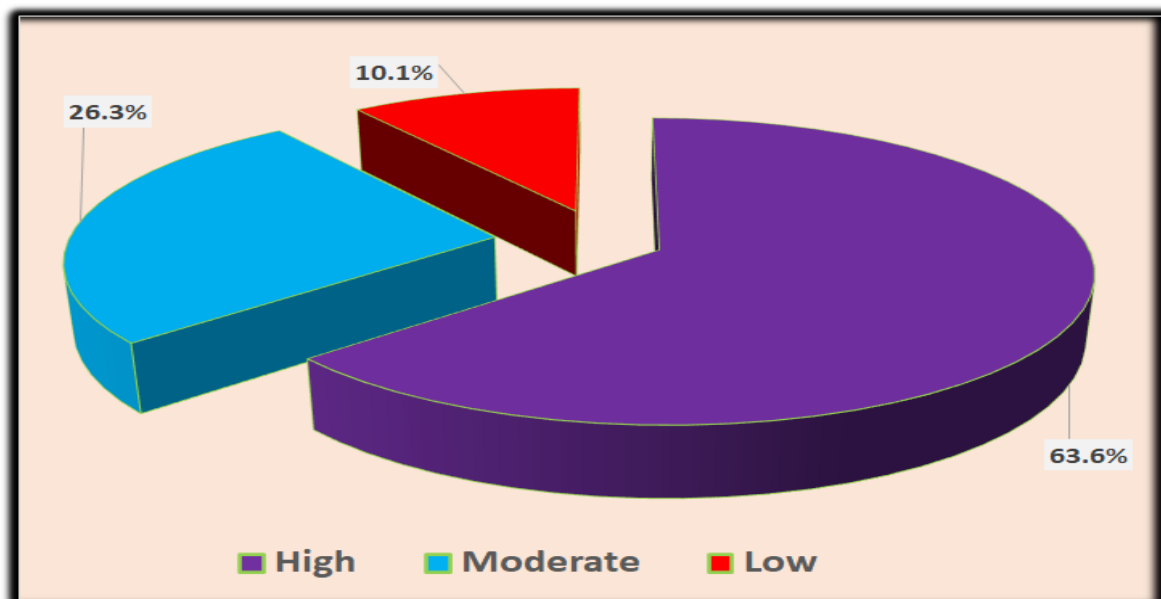
Figure (3): Total levels of nurses' professional quality of life from their perspectives during COVID-19

Table (4): Ranking with total mean and mean percentage of the nurses regarding the professional quality of life (n=94)

Professional Quality of Life Dimensions	Maximum Score	M±SD	Mean%	Ranking
Compassion satisfaction (CS)	50	33.94 ± 6.27	67.9	1
Secondary traumatic stress	50	32.03 ± 6.33	64.1	2
Burnout	50	26.31 ± 3.81	52.6	3
Total Professional Quality of Life	150	92.28±7.85		

**Figure (4): Total levels of job crafting as reported by nurses during COVID-19****Table (5): Ranking with total mean and mean percentage of the nurses regarding job crafting (n=94)**

Job Crafting Dimensions	Maximum Score	M±SD	Mean%	Ranking
Task crafting	25	18.33 ± 4.23	73.3	2
Relational crafting	25	16.01 ± 3.21	64.0	3
Cognitive crafting	25	21.97 ± 4.01	87.9	1
Total Job Crafting	75	56.31±6.25		

Table (6): Relation between total job demand, resources, professional quality of life, and job crafting with personal and work characteristics of the studied nurses during COVID-19 (n=94)

Personal and work characteristics	Job Demands	Job Resources	Professional Quality of Life	Job Crafting
Age (years)	Mean±SD	Mean±SD	Mean±SD	Mean±SD
25- < 30	39.14±3.31	39.17±2.08	38.85±1.13	34.19±4.05
30- < 35	37.50±2.11	36.17±3.72	3566.±2.11	31.94±3.61
35- 40	31.00±1.12	37.01±0.57	30.00±2.00	28.07±3.10
F value/p-value	4.278 / 0.015*	6.916 / 0.010*	5.271 / 0.013*	3.240 / 0.026*
Sex				
Male	90.20±1.45	88.64±10.40	90.16±4.95	82.51±0.22
Female	96.00±8.68	91.80±16.56	93.00±1.43	83.76±1.01
t value/p-value	1.219 / 0.226	0.205 / 0.840	0.991 / 0.325	0.003 / 0.997
Marital Status				
Married	31.06±4.08	31.02±3.64	28.38±3.66	31.65±2.64
Un-married	32.64±6.36	32.58±4.69	29.00±0.14	32.58±4.28
t value/p-value	0.172 / 0.680	0.864 / 0.446	1.987 / 0.122	0.614 / 0.608
Educational qualifications				
Nursing Diploma	160.20 ± 9.86	198.35 ± 9.12	174.76 ± 6.48	162.28 ± 11.20
Associated Nursing Diploma	175.53 ± 11.89	207.88 ± 9.13	187.12 ± 6.31	170.30 ± 9.10
Bachelor of Nursing Science	166.27 ± 13.13	190.41 ± 12.48	166.90 ± 5.88	160.45 ± 7.31
F value/p-value	11.619 / 0.001**	13.697/0.001**	9.400 / 0.001**	7.530 / 0.001**
Years of nursing experience				
5 - < 10	71.34±9.09	87.16±10.66	74.15±12.60	79.04±10.07
10- <15	69.08±12.56	70.18±10.34	69.05±19.24	71.18±11.55
15- 20	58.12±16.22	64.29±19.38	51.14±19.05	67.30±13.17
F value/p-value	11.707/ 0.001**	8.090/ 0.001**	10.451/ 0.001**	7.202/ 0.001**
Workplace				
ER	90.70±11.286	87.25±19.68	30.15±2.87	67.45±6.89
Pediatric	96.50±11.128	93.40±20.46	31.05± 3.54	63.550±12.12
ICU	99.95±10.102	83.80±12.74	30.75± 3.30	63.265±7.00
In-patient	103.38±10.719	104.64±15.16	27.00±3.60	76.200±14.181
F value/p-value	6.138/ 0.001**	7.910/ 0.001**	8.655/ 0.001**	6.416/ 0.001**
Shift hours				
10- 15	51.67±13.22	68.17±1.80	70.36±1.73	55.75±1.20
16- 20	49.55±8.20	66.67±1.59	68.71±1.46	52.90±2.54
More than 20 shifts	45.86±12.45	60.38±1.90	64.92±3.77	44.92±1.87
F value/p-value	10.495 / 0.001**	7.563 / 0.001**	9.691 / 0.001**	12.575 0.001**
Attended previous training courses about COVID-19				
Yes	22.07±5.69	22.22±4.78	21.67±5.95	18.98±4.05
No	21.24±6.11	21.84±3.11	20.98±6.11	17.00±3.00
t value/p-value	2.174/ 0.030*	2.053/ 0.040*	2.136/ 0.033*	2.144/ 0.035*

*Significant at (P < 0.05) ** highly significant at (P < 0.001)

F= One way ANOVA

t= Independent t-test

Table (7): Correlation between total job demand, resources, professional quality of life, and job crafting among nurses during COVID-19 (n=94)

Variables		Total job demand	Total job resources	Total professional quality of life	Total job crafting
Total job demand	r	--	0.461	0.363	0.879
	P	--	0.001**	0.001**	0.000**
Total job resources	r	0.461	--	0.697	0.324
	P	0.001**	--	0.001**	0.001**
Total professional quality of life	r	0.363	0.697	--	0.216
	P	0.001**	0.001**	--	0.036*
Total job crafting	r	0.879**	0.324	0.216	--
	P	0.000**	0.001**	0.036*	--

**highly significant at $P < 0.001$ * Statistically significant difference $P < 0.05$

r: Pearson coefficient

Discussion

Nursing is among the first six most stressful professions due to the demands of patients and families, the interaction with colleagues, the availability of resources to perform the job, and the constantly changing work environment. To exceed all these and increase nurses' professional quality of life, nurses utilize job-crafting behaviors to gather resources and achieve success at work (**Rodríguez-Pérez *et al.*, 2022**). As healthcare professions are among the first six most

The current study aimed to assess job demands, resources and its relation to nurses' professional quality of life and job crafting during COVID-19 pandemic. Discussion of the attained results is settled as follows; the first part focused on the nurses' perception of job demands; the second part focused on job resources from nurses' perspectives; the third part focused on the nurses' professional quality of life from their perspectives; the fourth part focused on the nurses' engaged in job crafting during COVID-19 pandemic; the fifth part focused on the relationship between personal and work characteristics of the nurses and the studied variables; and the sixth part focused on the correlation between the studied variables.

Part I: Nurses' Perception of job demands.

This part responded to the first research question: What is the level of job demands as perceived by nurses during COVID-19 pandemic?

Regarding job demand level, the findings of the study result revealed that a significant proportion of nurses at Mallawi General Hospital in Minya Governorate, Egypt, reported experiencing a high level of job demand. Specifically, less than three-quarters of the nurses surveyed indicated a high job demand level. On the other hand, the study revealed that the lowest percentage of nurses reported a low job demand level. This suggests that a

considerable number of nurses in the hospital face demanding work conditions, potentially characterized by heavy workloads, time pressures, and challenging responsibilities.

Furthermore, the findings validated that the highest mean percentage of nurses' perception of job demand was related to the workload dimension, while the lowest mean percentage was related to the role ambiguity dimension. The appropriate reason for this result is Covid19 pandemic has put an enormous strain on healthcare systems worldwide, leading to a surge in patients requiring medical care. Nurses have been at the forefront of providing essential care to COVID-19 patients, which has significantly increased their workload. The high demand for nursing services, combined with limited resources and staff shortages, has contributed to an overall increase in job demands. Also, the COVID-19 pandemic has presented unique challenges for healthcare workers, including nurses. They have had to adapt to new protocols and guidelines, implement infection control measures, and manage the emotional and physical stress of caring for severely ill patients, and element of fear and uncertainty can intensify the perceived job demand among nurses, as they must constantly prioritize their own safety while providing care to patients. These challenging working conditions have likely contributed to a higher perceived job demand among nurses.

Similarly, in a corresponding study, **Dahri et al., (2021)** found that the majority of participants indicated being classified under the high job demands category. Likewise, **Ahmed & Abd-El Ghani (2021)** obtained congruent findings in their research conducted in Egypt. These results were compatible with **Hu et al., (2016)** who indicated that time pressure and workload had high scores among job demands. In contrast to these results, the study of **Sakuraya et al., (2017)** showed that role ambiguity was a more common job demand within innovative organizations' rules who also mentioned that role ambiguity is a stressor that can hinder job demands and inhibit employee's learning and goal achievement.

Part II: Job Resources from Nurses' Perspectives

This part answered the second research question: What is the level of job resources from nurses' perspectives during COVID-19 pandemic?

Regarding job resources level, the present study results indicated that a significant proportion of nurses, specifically more than two-thirds of them, reported having a moderate level of job resources. This suggests that the majority of nurses possess a moderate amount of resources available to them in their work environment. Furthermore, the finding shown that, the lowest percentage of nurses reported having a low level of job resources. This implies that only a small proportion of nurses indicated having a scarcity of resources in their job context.

Moreover, when examining the different dimensions of job resources, it was found that the highest mean percentage of job resources was associated with the job control dimension. This means that nurses felt they had a relatively high level of control and autonomy over their work-related decisions and activities. On the other hand, the lowest mean percentage of job resources was associated with the organizational support dimension. This suggests

that nurses perceived a comparatively lower level of support from their organization in terms of resources provided, such as training opportunities, equipment availability, or staffing assistance.

In summary, these findings indicated that while the majority of nurses reported having a moderate level of job resources, there is a need to enhance organizational support to ensure that nurses receive adequate resources to perform their duties effectively. Additionally, efforts can be made to maintain or improve the high level of job control experienced by nurses, as it plays a significant role in their job satisfaction and overall well-being. The findings of this study align with the results obtained in the research carried out by **Ahmed & Abd-El Ghani (2021)**.

Part III: Nurses' professional quality of Life from their perspectives

This part answered the third research question: What are the levels of professional quality of life from the nurses' perspective during COVID-19 pandemic?

Regarding the professional quality of life, the results of the current study indicated that approximately half of nurses held a moderate perception of their professional quality of life, whereas around one-fifth of them had a low perception level. Furthermore, the findings revealed that nurses had the highest average level of perception towards compassion satisfaction, while the lowest average level was associated with burnout.

From the perspective of the researchers, this outcome may be connected to the internal emotions and conflicts that nurses experience regarding their perceived significant role in the COVID-19 pandemic. However, they can strongly adhere to their innate motivation and sense of responsibility in delivering nursing care and derive satisfaction from the feeling of accomplishment or gratification resulting from their contributions to the well-being of patients and their families in their everyday work. This is in addition to the overwhelming workload, rotating shifts, and work environment. Despite the emotional and psychological exhaustion nurses face, the satisfaction they derive from aiding others is remarkably evident and can serve as a safeguard against burnout. This result follows the study conducted by **Li et al., (2022)** showed that Chinese nurses had moderate to high levels of professional quality of life. Similarly, **Akram & Awad, (2020)** reported moderate levels of work-life domains. However, these findings contradict the results of **Elshahat et al., (2019)**, who reported that more than half of the participants in their study had a low quality of work life. Furthermore, **Liu et al., (2020)** discovered significantly higher levels of stress, depression, and burnout among professionals working with COVID-19 patients.

Part IV: Nurses Engaged in Job Crafting.

This part answered the fourth research question: What is the extent which nurses are engaged in job crafting during COVID-19 pandemic?

Regarding job crafting level, the finding of the present study clarified that around two-thirds of nurses had a high level of job crafting behaviors while about the lowest percentage

of them had a low level of job crafting behaviors as reported by nurses. This finding could be attributed to nurses' adoption of demanding objectives in response to the COVID-19 pandemic, aiming to showcase their professional capabilities, their effective contributions in delivering nursing care, and their collaboration with doctors to enhance overall health outcomes and alleviate the adverse effects of the epidemic. Nurses perceive their roles as crucial and purposeful, which likely instills intrinsic motivation in them to refine and craft their job responsibilities, optimize work processes, and attain desired levels of job performance.

The findings align with previous research conducted by **Baghdadi *et al.*, (2021)** indicating a high level of job crafting. In contrast, **Saad & Ahmed, (2020)** conducted a study in Egypt, revealing a low level of job crafting. Furthermore, the findings indicated that cognitive crafting exhibited the highest average proportion of job crafting among nurses, whereas the lowest average proportion was observed in the relational crafting dimension. These results align with previous studies, such as the one conducted by **Kalyan *et al.*, (2018)** in South India, which reported a similar pattern with a higher mean score in cognitive crafting, followed by task and relational crafting. Conversely, these results are challenged by **Chang *et al.*, (2020)** in South Korea, as they confirmed that, the cognitive crafting category has the lowest score while relationship crafting received the highest rating score.

Part V: Relation between personal and work characteristics of the nurses and the studied variables

The current study findings demonstrated that, there were highly statistically significant relations found between nurses' educational qualifications, years of experience, workplace, number of shifts and total job demands, resources, professional quality of life, and job crafting. Also, there were statistically significant positive relations between nurses' age, attended previous training courses about COVID-19, and their total job demands, resources, professional quality of life, and job crafting. Otherwise, no statistically significant relations were found between nurses' sex, marital status, and their total job demands, resources, professional quality of life, and job crafting.

Regarding the relation between personal and work characteristics of the nurses and job demands and resources; from the perspective of the researchers, this result could be related to the personal and work characteristics influencing nurses' perception and appraisal of job demands and resources. Perhaps, nurses perceive demanding situations as challenges rather than threats, which can positively impact their ability to utilize available resources. Similarly, nurses are more likely to seek support from colleagues and utilize teamwork as a resource in managing job demands. Understanding this relationship is important for organizations to create a supportive work environment, optimize resource allocation, and enhance nurses' well-being and enabling them to handle complex patient cases and demanding work situations.

Regarding the relation between the personal and work characteristics of the nurses and their

professional quality of life; this result is contradicting of **Essa *et al.*, (2021)** which indicated that there is no association between the levels of quality of work life among the nurses under study and their personal and job characteristics, including age, educational level, and years of experience. Furthermore, the study conducted by **Moradi *et al.*, (2014)** demonstrated that there is no significant correlation between age and the quality of working life of nurses.

Regarding the relation between personal and work characteristics of the nurses and job crafting; these results are consistent with previous studies. For instance, **Romeo *et al.*, (2019)** discovered that job crafting was influenced by years of experience and educational level. Similarly, **Demerouti *et al.*, (2019)** found that age and marital status did not have an impact on job crafting in their interventions. **Saad & Ahmed, (2020)** also conducted a study demonstrating a highly significant relationship between job crafting, age, and years of experience, as well as a significant relationship between job crafting and educational level.

Part VI: Correlation between the studied variables

This part answered the fifth research question: Is there a relation between the nurses' perception of job demands, resources, and professional quality of their life and job crafting during COVID-19 pandemic?

The present study findings illustrated that there was a highly statistically significant positive correlation between nurses' job demands, resources, and professional quality of life, as well as job crafting. Additionally, there was a statistically significant positive correlation between nurses' professional quality of life and job crafting. This could be attributed to various factors. Here's a potential explanation: Nurses' job demands refer to the challenges and workload they face in their profession, such as long working hours, high patient caseloads, and dealing with stressful situations. These demands can have an impact on their well-being and professional quality of life. However, if nurses have access to sufficient resources, such as adequate staffing, training opportunities, and supportive work environments, they may be better equipped to cope with these demands. This, in turn, can positively influence their professional quality of life.

Furthermore, job crafting refers to the proactive behaviors undertaken by individuals to shape and redesign their jobs to better align with their preferences, strengths, and motivations. When nurses engage in job crafting, they may modify certain aspects of their work, such as task selection, relationships with colleagues, or the way they approach their responsibilities. Engaging in job crafting allows nurses to have a sense of autonomy and control over their work, leading to an increase in their professional quality of life.

The positive correlation between nurses' professional quality of life and job crafting suggests that nurses who actively engage in shaping their job to fit their needs and preferences experience higher levels of professional satisfaction, fulfillment, and overall well-being. In conclusion, job-related stress, job resources, and professional quality of life all play a significant role in how well nurses accomplish their duties, which in turn affects patient outcomes and the effectiveness of the healthcare system.

Similarly, **Bakker, (2017)** stated that job crafting has been found to have a positive correlation with job resources. Therefore, healthcare professionals who engage in job crafting behaviors appear to enhance their job resources and align the organization with their skills and preferences. This may be attributed to the fact that job crafting encourages nurses to actively seek out resources, such as seeking advice from supervisors or colleagues, soliciting feedback on their career performance, and pursuing opportunities for personal development. They tend to expand their resource pool to maintain their well-being and job satisfaction. Consequently, nurses invest in resources as a means of safeguarding against resource depletion and acquiring new ones.

Furthermore, the control over their daily work environment and the ability to align their job with personal preferences and needs by actively seeking challenging demands and resources while reducing hindering demands have been reported by **Gordona *et al.*, (2018)** as benefits of job crafting for nurses in a changing work environment.

Similarly, **Riedl & Thomas, (2019)** confirmed that, individuals engage in job crafting activities when they perceive high job demands, such as a heavy workload, along with the presence of job resources. These activities serve to decrease or alleviate the perceived negative conditions. Additionally, **Ahmed & Abd-El Ghani, (2021)** found that, job crafting is influenced by the interplay between job demands and available job resources.

However, contrary to the present study, **Bakker & Demerouti, (2017)** proposed that employees who engage in job crafting behaviors, such as seeking training and feedback, enjoying autonomy, pursuing self-development opportunities, participating in new projects, and reducing role ambiguity and workload, experience positive outcomes.

Conclusion

The study's findings concluded that, fewer than three-quarters of nurses reported a high perceived level of job demands and job resources. Furthermore, approximately half of the nurses had a moderate level of professional quality of life, while approximately two-thirds of them exhibited a high level of job-crafting behaviors. Furthermore, there was a significant positive correlation, supported by strong statistical evidence, between nurses' job demands, job resources, professional quality of life, and job crafting. Additionally, a statistically significant positive correlation was found between nurses' professional quality of life and job crafting.

Recommendations

Based on data analysis and research findings, the following recommendations can be proposed to hospital management and nursing leadership to create an environment that reduces excessive job demands, provides necessary resources, and fosters the professional quality of nurse's life through job crafting this in turn can lead to better patient outcomes.

1. Nurse managers should choose and implement appropriate mechanisms that assess, regularly monitor and estimate job demands and resources.

2. Regarding to adjusting policies and practices that enhance nurses' professional quality of work life.
3. Nurse managers should reflect ethical consideration as justice, fairness, and professional development related to nurses needs which improve the quality of their work life.
4. Nurse managers should be assessing and implementing the ongoing training programs for nurses to clarify the importance of job crafting in different work environments and management positions. This will better equip them to handle future job-related challenges with greater self-control and management.
5. Nurse managers should be trained on factors that contribute to job insecurity and understand its effects on both nurses and the organization as a whole.
6. Nurse managers should establish a management plan to cope with stress and burnout, which can significantly improve nurses' professional quality of life.

Additionally, further research should be conducted to:

1. Investigate the efficacy of targeted measures in enhancing the professional quality of work life for nurses.
2. Evaluate the correlation among organizational pride, job crafting, and performance quality.
3. Assess the relationship between job demands and resources for improving nurses' productivity.

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Authors' contributions

The research was a collaborative effort by all authors, encompassing the proposal, script drafting, methodology development, implementation, article contribution, and final approval of the submitted version.

References:

1. Al-Ahram. (2020). Published National Governmental Report, December 2020. available at: <https://gate.aharam.org.eg>.
2. Adil, S & Baig, M., (2018): Impact of job demands-resources model on burnout and

- employee's well-being: Evidence from the pharmaceutical organizations of Karachi. *IIMB Management Review*. 30, 119–133
3. Ahmed, F.& Abd-El Ghani, M. (2021). Job Demands, Job Resources and its Relationship with Job Crafting among Head Nurses. *Egyptian Journal of Health Care*, 12 (2).
 4. Akram, S. & Awad, M. (2020). Advantage and limitation of nursing students' training at governmental intensive care units in Gaza strip: Nurses' perceptions. *International Journal of Advance Research in Medical Surgical Nursing*; 2(1): 23-2.
 5. Bakker, B. (2017). Job crafting among health care professionals: The role of work engagement, *Journal of Nursing Management*, 26 (3):321-331. DOI: 10.1111/jonm.12551. <https://doi.org/10.1111/jonm.12551>.
 6. (2017). .
 7. Blanc, L., Demerouti, E.& Bakker, B. (2017). How can I shape my job to suit me better? Job crafting for sustainable employees and organizations. *An Introduction to Work and Organizational Psychology: An International Perspective*, Third Edition. John Wiley & Sons Ltd, Hoboken, New Jersey; 48-63. 10.1002/9781119168058.ch3
 8. Cengiz, A., Yoder, H. & Danesh, V. (2021). A concept analysis of role ambiguity experienced by hospital nurses providing bedside nursing care. *Nursing & Health Sciences*, 23(4), 807-817.
 9. Cho, S., Noh, H., Yang, E., Lee, J., Lee, N., Schaufeli, B. & Lee, M. (2020). Examining the job demands-resources model in a sample of Korean correctional officers. *Current Psychology*, 39, 1521-1534.
 10. De Leon, A. (2019). The moderating role of culture in the job demands-resources model. Published Doctorate Thesis. Louisiana Tech University. 43-45.
 11. Demerouti, E., Peeters, C. & van den Heuvel, M. (2019). Job Crafting Interventions: Do They Work and Why? In *Positive Psychological Intervention Design and Protocols for Multi-Cultural Contexts*, 103-125.
 12. Elshahat, M., Shazly, M. & Abd-Elazeem, H. (2019). Relationship between quality of work life and turnover intention among staff nurses. *Egyptian Journal of Healthcare*, 10(1), 178-193.
 13. Essa, M., Abood, S. & Thabet, M. (2021). Relation between Quality of Nursing Work Life and Organizational Commitment. *Minia Scientific Nursing Journal*, 10(1), 27-34.
 14. European Centre for Disease Prevention and Control. (2020). COVID-19 situation update worldwide. Available from: <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>.
 15. Gabr, H. & El-Shaer, M. (2013). Head nurses ' job demands and resources and their relationship with their work engagement at Mansoura University Hospitals. *Public Policy and Administration Research*, 3 (4):33-42. ISSN 2225-0972(Online).
 16. Gardner, D. (2020). The importance of being resilient: Psychological well-being, job autonomy, and self-esteem of organization managers. *Personality and Individual Differences*, 155, 109731.
 17. Geldenhuys, M., Bakker, B. & Demerouti, E. (2021). How task, relational and cognitive crafting relate to job performance: A weekly diary study on the role of meaningfulness. *European Journal of Work and Organizational Psychology*, 30(1), 83-94.
 18. Gordona, J., Demeroutia, E., Le Blanca, M., Bakkerb, B., Bippc, T. & Verhagend, T.

- (2018). Individual job redesign: Job crafting interventions in healthcare. *Journal of Vocational Behavior* 104, 98–114. Available at Science Direct.
19. Hu, C., Cui, S. & He, H. (2016). Path Analysis of the Related Factors to Subjective Well-Being of Primary and Middle School Principals—Based on Job Demands-Resources Model. Published online *Psychology*, 7 (3), 335-344. <http://www.scirp.org/journal/Psych>
 20. Hu, W., Zhang, S., & Liu, S. (2022). Red Tape and Community Workers' Proactive Behavior During COVID-19: Applying the Job Demands–Resources Model. *Frontiers in Psychology*, 13.
 21. Ingusci, E., Signore, F., Giancaspro, L., Manuti, A., Molino, M., Russo, V. & Cortese, G. (2021). Workload, techno overload, and behavioral stress during COVID-19 emergency: The role of job crafting in remote workers. *Frontiers in Psychology*, 12, 655148.
 22. Kalyan, S., Manjula, S., Kondeti, C., Padma, M., Suresh, S. & Pratap, V. (2018). Making our job hospitable”—Assessment of job-crafting behavior among dental academic faculty in South India. *Journal of Indian Association of Public Health Dentistry*;16(2): 149.
 23. Li, J., Wang, Q., Guan, C., Luo, L. & Hu, X. (2022). Compassion fatigue and compassion satisfaction among Chinese palliative care nurses: A province-wide cross-sectional survey. *Journal of Nursing Management*, 30(7), 3060–3073. <https://doi.org/10.1111/jonm.14788>.
 24. Liu, S., Yang, L., Zhang, C., Xiang, Y. T., Liu, Z., Hu, S., & Zhang, B. (2020). Online mental health services in China during the COVID-19 outbreak. *The Lancet Psychiatry*, 7(4), e17–e18. [https://doi.org/10.1016/S2215-0366\(20\)30077-8](https://doi.org/10.1016/S2215-0366(20)30077-8).
 25. Lequeurre, J., Gillet, N., Ragot, C. & Fouquereau, E. (2013). Validation of a French questionnaire to measure job demands and resources. *Revue internationale de psychologie sociale*, 26(4), 93-124.
 26. Monroe, M., Morse, E. & Price, J. M. (2020). The relationship between critical care work environment and professional quality of life. *American Journal of Critical Care*, 29(2), 145-149.
 27. Moradi T., Maghaminejad, F. & Azizi-Fini, I. (2014). Quality of Working Life of Nurses and its Related Factors. *Nurs Midwifery Stud*; 3(2): e1945.
 28. Niu, A., Li, P., Duan, P., Ding, L., Xu, S., Yang, Y. & Luo, Y. (2022). Professional quality of life in nurses on the frontline against COVID-19. *Journal of Nursing Management*, 30(5), 1115-1124.
 29. Nordhall, O., Knez, I., Saboonchi, F., & Willander, J. (2020). Teachers' Personal and Collective Work-Identity Predicts Exhaustion and Work Motivation: Mediating Roles of Psychological Job Demands and Resources. *Frontiers in Psychology*, 11, 1538.
 30. Pang, Y., Dan, H., Jung, H., Bae, N. & Kim, O. (2020). Depressive symptoms, professional quality of life and turnover intention in Korean nurses. *International nursing review*, 67(3), 387-394.
 31. Petrou, P. & Xanthopoulou, D. (2021). Interactive effects of approach and avoidance job crafting in explaining weekly variations in work performance and employability. *Applied psychology*, 70(3), 1345-1359.
 32. Rashmi, K. & Kataria, A. (2021). The mediating role of work-life balance on the relationship between job resources and job satisfaction: perspectives from Indian nursing professionals. *International Journal of Organizational Analysis*, (ahead-of-print).
 33. Riedl, E. & Thomas, J. (2019). The moderating role of work pressure on the relationships between emotional demands and tension, exhaustion, and work engagement: an

- experience sampling study among nurses. *European Journal of Work and Organizational Psychology*. 28(3)414-429.
34. Rodríguez-Pérez, M.; Mena-Navarro, F.; Domínguez-Pichardo, A.; Teresa-Morales, C.(2022). Current Social Perception of and Value Attached to Nursing Professionals' Competences: An Integrative Review. *Int. J. Environ. Res. Public Health*, 19, 1817.
 35. Romeo, M., Yepes-Baldó, M., Piñeiro, Á., Westerberg, K. & Nordin, M. (2019). Job crafting and well-being in the elderly care sector: The effect of over-commitment. *Employee Relations*; 41 (3),405-419.
 36. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *Journal of Clinical Nursing*, 29(21-22), 4321–4330. <https://doi.org/10.1111/jocn.15469>.
 37. Saad, E, & Ahmed, F. (2020). Emotional Stability of Nurses and its Relation to Their Job Crafting. *Evidence-Based Nursing Research*; 2(1): 10-10.
 38. Sakuraya, A., Shimazu, A., Eguchi, H., Kamiyama, K., Hara, Y., Katsuyuki Namba, K. & Kawakami, N. (2017). Job crafting, work engagement, and psychological distress among Japanese employees: a cross-sectional study. *Biopsychosocial Medicine*, 11(6). DOI 10.1186/s13030-017-0091-y.
 39. Schaufeli, W. (2017). Applying the job demands-resources model. *Organizational dynamics*, 2(46), 120-132.
 40. Shah, T., Akter, K., Hasan, S., Chakrovarty, T., Sakib, N. & Islam, T. (2022). Factors determining preventive practices of the healthcare workers regarding COVID-19 in Bangladesh. *Health science reports*, 5(1), e484.
 41. Tims, M.; Bakker, B. & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *J. Occup. Health Psychol.* 18, 230. [PubMed].
 42. Walinga, J. (2019). *Introduction to Psychology*. 1st Canadian ed. Open Textbook Project. Hewlett Foundation. <https://opentextbc.ca/introductiontopsychology/frontmatter/about-the-book/>.
 43. Wijngaards, I., Pronk, R., Bakker, B. & Burger, J. (2022). Cognitive crafting and work engagement: A study among remote and frontline health care workers during the COVID-19 pandemic. *Health Care Management Review*, 47(3), 227.
 44. Yu, H., Qiao, A. & Gui, L. (2021). Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: A cross-sectional survey. *International emergency nursing*, 55, 100961.

المخلص العربي

متطلبات العمل والموارد وعلاقتها بجودة الحياة المهنية للممرضات وصياغة الوظائف أثناء جائحة COVID-19

مقدمة: أثناء جائحة COVID-19 و لتحقيق توافق أفضل مع متطلبات العمل والموارد ومواهب الممرضات ، و الذي يتحقق من خلال تحسين نوعية الحياة المهنية للممرضات وتعديل المهام الوظيفية ، وتعزيز العلاقات مع زملاء العمل ، وإعادة تقييم قيمة عمل الممرضات والتي تعرف عمليا بإسم صياغة الوظائف. **يهدف البحث** إلى تقييم متطلبات العمل والموارد وعلاقتها بجودة الحياة المهنية للممرضات وصياغة الوظائف خلال جائحة COVID-19. **تصميم البحث:** تم تطبيق التصميم الوصفي الارتباطي. **مكان البحث:** أجريت الدراسة في مستشفى ملوي العام في محافظة المنيا ، مصر. **عينة البحث:** تم أخذ العينات بطريقة إستهدافية بنهج غير إحتمالي وذلك لإختيار المشاركين لهذه الدراسة حيث أن العدد الكلي للممرضات يتكون من 350 ممرضة ، قد تم اختيار عينة مكونة من 94 ممرضا وممرضة بناء على وحدات محددة مسبقا ومعايير للإختيار. **أدوات البحث:** واستخدمت أربع أدوات هي إستبيان متطلبات العمل ، إستبيان موارد العمل ، مقياس جودة الحياة المهنية وإستبيان صياغة الوظائف. **النتائج:** كشفت الدراسة أن أقل من ثلاثة أرباع (70.1%) وأكثر من ثلثي (69.6%) من الممرضات لديهم مستوى عال من الإدراك فيما يتعلق بمتطلبات العمل والموارد الوظيفية على التوالي. أيضا ، كان لدى حوالي نصف الممرضات (48.8%) مستوى حياة مهني معتدل ، وحوالي ثلثيهم (63.6%) لديهم مستوى عال من سلوكيات صياغة الوظائف. **الخلاصة:** وجد البحث أن هناك علاقة إيجابية ذات دلالة إحصائية عالية تم الكشف عنها بين متطلبات وظيفة الممرضات ومواردهن ونوعية الحياة المهنية ، فضلا عن صياغة الوظائف. **التوصيات:** أوصت الدراسة بأن يقوم مديرو التمريض بتنفيذ آليات لرصد وتقييم متطلبات العمل والموارد بانتظام وتعديل السياسات والممارسات وفقا لذلك لتعزيز جودة الحياة العملية المهنية للممرضات.

الكلمات الرئيسية: صياغة ، COVID-19 ، متطلبات العمل ، موارد العمل ، جودة الحياة المهنية للممرضات