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Work stressors and intention to leave among nurses in isolation nursing units during COVID-19: a cross-sectional study

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Abstract

Background Work stressors are associated with physical and psychological health problems among workers and thus increase their intentions to leave work. Various factors, including fear of infection, workload, and inadequate support, caused nurses especially those on the front lines during the COVID-19 pandemic greater stress.

Aim This study aims to identify Jordanian nurses' perceptions of work stressors and their intention to leave, and to investigate the relationship between these variables among nurses working in isolation units during the COVID-19 pandemic.

Methods A descriptive cross-sectional study was conducted. A convenience sample of 154 nurses who worked with COVID-19 patients participated in this study. Questionnaires were distributed online.

Results A total of 154 nurses participated in the study, with an average age of 29.59 years. A majority of nurses (61.1%) were employed in COVID-19 isolation units for a duration of 6 to 8 months. Of the work-related stresses, the mean score was 3.17; 85.7% of respondents reported a positive level of stress. Intent to leave had a mean score of 4.03; 57.8% of respondents showed a slightly positive intention. Work stresses and intention to leave showed a modest, positive significant correlation ($r = 0.52$, $p = 0.001$).

Conclusions In COVID-19 isolation units, Jordanian nurses' work stresses were positively correlated with their intention to leave. Lower-educated and single nurses were more stressed and likely to leave. Based on the findings, targeted stress-reduction programs are needed. Nursing retention and healthcare system sustainability amid public health emergencies depend on supportive, well-resourced workplaces.

Keywords Work stressors, Intention to leave, COVID-19, Nurses, Jordan

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Introduction

Work stressors are factors within work environments that have been shown to affect workers' stress levels [1, 2]. The disparity between work demands and a worker's capabilities results in work-related stress, which correlates with physical and psychological health issues, increased absenteeism, and employees' intentions to leave from their positions [3]. Workplace stress will escalate if workers perceive a lack of support from their peers and managers [2].

Workplace stress has numerous negative effects on healthcare providers, categorized as follows: psychological effects, including anxiety, depression, and job dissatisfaction; behavioral effects, such as sleep disturbances, absenteeism, and turnover; and physical effects, including headaches, irritable bowel syndrome, and hypertension [4]. The aforementioned effects are seen as elements influencing the quality of patient care, establishing a correlation between these consequences, burnout, and poor patient safety [5]. Healthcare professionals, particularly nurses, face several stressors in their work environment [6]. Stressors for nurses may stem from several aspects, including legal and employer-related concerns, work-life balance, professional practice, and external values and beliefs toward nursing [7].

The COVID-19 pandemic has intensified these pre-existing issues, imposing significant additional strain on healthcare personnel who were at the forefront of a worldwide health crisis [8, 9]. Since COVID-19 rapidly spread, there has been a greater need than ever before for efficient viral management in order to contain the virus and treat patients. As a result, nurses faced new and significant stresses, such as the potential for infection, fear of death, emotional exhaustion, isolation, and the fear of infecting loved ones [10, 11]. Also, The increased number of patients and a shortage of healthcare workers resulting from illness and fatalities elevated stress levels, resulting in an exacerbated occupational and psychological burden on nurses [12].

The turnover rate among healthcare professionals, especially nurses, constitutes a substantial global concern. The heightened demand for healthcare services and the substantial expenses related to recruiting and training render nurse retention essential, particularly during emergencies such as the COVID-19 pandemic [13, 14]. Similar to many other countries, Jordan faces challenges in nurse retention attributed to elevated working stress and a propensity to depart, particularly in the setting of COVID-19 [15]. Previous studies revealed that healthcare workers who dealt and compacted with COVID-19 reported high psychological effects including stress, anxiety, and depressive symptoms [16]. Ali, Cole, Ahmed, Hamasha and Panos [17] indicated that 71% of nurses were concerned about treating COVID-19 patients and

demonstrated a high level of workload-related stress resulting from providing care for infected individuals. Also, they found that 82% of nurses have stress about the transmission of infection to their friends and family [17].

Several factors contributed to feelings of stress among healthcare workers. These factors include the followings: lack of personal protective equipment; inadequate guidance and training in dealing with COVID-19; time pressure and long work hours; the risk of catching infection; the risk of bringing the infection to family members; the uncertainty of information about COVID-19; and colleagues' fear [18]. Elevated stress levels resulted in a rise in sick leave requests and absenteeism among healthcare workers, therefore exacerbating workloads, increasing burdens on their colleagues, and adversely impacting overall patient care [19]. Also, elevated fear levels associated with COVID-19 were correlated with diminished job satisfaction, increased psychological discomfort, and increased organizational and professional intentions to leave [20].

Work pressures on nurses' intention to leave, especially in isolation nursing units during the COVID-19 pandemic, are crucial. Few studies have examined nurses stress and turnover in isolation units during the COVID-19 pandemic. This study explores these issues in Jordan, a Middle Eastern context overlooked in the literature. This research also sheds light on infectious disease pandemic stressors like fear of contagion, lack of support, and the psychological toll of working in isolation units. These insights are crucial for healthcare managers and policymakers to develop targeted job stress and turnover interventions, especially in future pandemics or crises. Thus, our findings indicate theoretical and practical aspects that may improve nurse retention and patient care under comparable future situations. Thus, this study aims to identify the nurse's perceptions of work stressors and intention to leave and to investigate the relationship between the previously mentioned variables among Jordanian nurses in isolation units during the COVID-19 pandemic.

Research questions

1. What are the perceptions of work stressors and intention to leave levels among Jordanian nurses in isolation units during the COVID-19 pandemic?
2. Are there significant differences in the work stressors scores and intention to leave according to demographic data of Jordanian nurses in isolation units during the COVID-19 pandemic?
3. There is relationship between work stressors and intention to leave among Jordanian nurses in isolation units during the COVID-19 pandemic?

Method

Study design

This study employed a descriptive cross-sectional correlational design. The study was descriptive as it aimed to identify nurses' perceptions of work stressors level and intention to leave level, and correlational as it aimed to investigate the relationships between the study variables which are work stressors and intention to leave.

Settings and sample

This study was conducted in the COVID-19 isolation nursing units in two Jordanian public governmental hospitals in Amman Governorate. These hospitals are specialized in dealing with COVID-19 patients from the beginning of the outbreaks in Jordan. The total bed capacity for the first hospital was 166 beds, and the total number of nurses in isolation units was 150 nurses. The second hospital includes 65 beds for COVID-19 cases and the total number of nurses in isolation units was 100 nurses.

The target population was all nurses working in rotating shifts at Jordanian COVID-19 isolation units. The accessible population was nurses working in all isolation units at the selected hospitals. A convenience sampling method was used. The sample size was estimated by using a sample size online calculator (Creative Research Systems. Survey software) based on the study population, with a predetermined confidence level of 95%. Taking into consideration that the accessible population size is around 250 nurses. Questionnaires were distributed online to more than 200 nurses, and the final response was 154 nurses.

The inclusion criteria were: (1) Jordanian nurses with at least a diploma degree (practical associated nurses), (2) nurses who work in rotating shifts, (3) having at least 1 year of experience in the current workplace, (4) nurses who deal with COVID-19 patients, (5) having experience at least 6 months in COVID-19 unit. Excluded nurses who have managerial positions and work on the 1st shift only because managers had less contact with COVID-19 patients.

Study instruments

Data collection instruments that were used in this study included: (1) A socio-demographic and professional characteristic data sheet; (2) Nurses Occupational Stressors Scale (NOSS); (3) Turnover Intention Scale (TIS).

Socio-demographic and professional characteristic

Participants were asked about their age, gender, marital status, education level (diploma (short-term program (2 years)), bachelor (4 years), master (postgraduate academic degree pursued after a bachelor's degree, typically requiring 2 years)), number of years in practicing

nursing, number of years in practicing nursing in the current hospital, and number of months practicing nursing in the COVID-19 isolation unit.

Nurses occupational stressors Scale (NOSS) -21 items

It developed by Chen, Liang, Li, Guo, Fei, Wang, He, Sheng, Cai, Li, et al. [21]. It contains 21 items that are distributed into nine subscales as follows: (1) work demands subscale 3-items, (2) work-family conflict subscale 3-items, (3) insufficient support from coworkers or caregivers subscale 3-items, (4) workplace violence and bullying subscale 1-item, (5) organizational issues subscale 3-items, (6) occupational hazards subscale 2-items, (7) difficulty taking leave subscale 2-items, (8) powerlessness subscale 2-items, and (9) unmet basic physiological needs subscale 2-items. All items are scored on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). The mean of the 21 items was used to estimate the participants' occupational stressors levels. The mean of the NOSS is ranged from the lowest mean 1 to the highest mean 4. Therefore, the mean was divided into 4 intervals reflecting 4 levels of occupational stressors (strong negative level (1-1.49), negative level (1.5-2.49), and positive level (2.5-3.49), strong positive level (3.5-4). This scheme has more than 90% efficiency in avoiding the mean interpretation biases of a 4-point Likert scale [22]. The Cronbach's score of the 21-item NOSS as a whole was 0.91. The content validity index of the NOSS was 0.81.

Turnover intention Scale (TIS)

Turnover Intention Scale (TIS) was developed by Michaels and Spector [23]. It is used to predict the intention to leave of employees. It contains 3-Items. All items were scored on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree). This scale includes questions asking how often respondents seriously thought about quitting their job, whether they wanted to quit, and whether they were planning to quit by starting to look for another job. The turnover intention score was an average sum of scores of the three items, ranging from 1 to 6, reflecting the intention to leave levels respectively as (strong negative (1-1.83), moderate negative (1.84-2.67), slight negative (2.68-3.51), slight positive (3.52-4.35), moderate positive (4.36-5.19), and strong positive (5.2-6)). The Cronbach's alpha score for the scale is 0.80 and valid and reliable measurement to detect nurses turnover intentions.

Ethical considerations

Official approvals were obtained from the Institutional Review Board (IRB) of Zarqa University (ref.nr: 1/2021), the Jordanian Ministry of Health, and the selected hospital administrative authorities. A consent form, study objectives, and confidential assurance were sent with

the questionnaires to avoid ethical concerns regarding enrolling participants in the study against their willingness. Participants were assured that their participation was completely voluntary without any coercion. All data which were collected for this study including the online application properties of participants were in the safekeeping of the researcher (password-locked personal computer). The participants were assured that all obtained information was used for research purposes only.

Data collection procedure

The researcher visited the director of nursing of each hospital to obtain ethical approval and explain the study's purpose. Following this, the researcher introduced self to the nurse managers, providing an overview of the study's purpose and data collection procedure. After discussing the study's purpose and data collection procedure with nurse managers, the researcher obtained a list of eligible nurses, and distributed invitation letters via WhatsApp. Nurses who agreed to participate signed an electronic consent form and completed an online questionnaire package (Google Forms). This package contains a consent form, the objective of the study, guidelines to fill out the questionnaires, and the instruments. A reminder message was sent 1 week after the first invitation through WhatsApp by their manager. Data collection was started on February 21, 2021, and was completed on March 20, 2021.

Data analysis

Before conducting data analysis, the researcher checked all the questionnaires to assess if participants meet the inclusion criteria. Data were analyzed using the Statistical Package for Social Science (SPSS), Version 25. Frequencies and percentages, means, and standard deviation were included to describe study variables including demographic variables, work stressors items, and intent to leave items. Mann-Whitney U (Gender & Marital status) and Kruskal-Wallis (Education level) were used to investigate the relationships between samples' demographic data and both work stressors and intention to leave, non-parametric statistical tests used to assess differences between groups when the data violated the assumptions of normality or when dealing with ordinal data. Pearson's r -coefficient correlation was used to determine the presence, and the direction of a relationship between the work stressors and intent to leave. In this study, a statistical significance level of $p < 0.05$ was set for all analyses.

Results

One hundred and fifty-four nurses participated in the current study, who ranged in age from 23 to 39 with an average age of 29.59 years ($SD = 3.8$). The majority of the sample age were 45.5%. The nurses had an average of years of practicing in nursing 55.2% (1–5 years). Nurses had an average of 8.27 months in practicing nursing in COVID-19 isolation units and 61.1% of the sample had worked in the COVID-19 isolation unit for (6–8) months. More than half of the sample was married. The majority of the sample (74.7%) had a bachelor's degree in nursing, as Table 1.

Nurses' perceptions regarding work stressors and the intention to leave

Table 2 shows that the total mean score of work stressors was 3.17. The majority of the sample 85.7% had a positive work stressors level. In depth, higher than 50% of the sample had a positive level for all work stressors except for WFC, which is 61.7% of the sample reported as a strong positive level for WFC. Regarding to intention to leave, the mean score of intention to leave was 4.03. The majority of the sample 57.8% had a slightly positive intention to leave level and 4.5% had strong positive intention to leave level, as presented in Table 3.

Differences in work stressors and intention to leave scores according to demographic data

Table 4 presented that the analysis revealed no significant differences between males and females regarding their work stressors scores ($U = 2901.5$, $Z = -0.22$, $p = 0.82$). Regarding marital status, analysis revealed that there was a significant difference between single and married nurses concerning their work stressors scores. The analysis of the Mann-Whitney U test found that work stressors scores for single nurses were higher than married nurses scores ($U = 2112.5$, $Z = -3.00$, $p = 0.003$). Concern of intention to leave, the results found that no significant differences between males and females regarding their intention to leave scores ($U = 2805.5$, $Z = -0.575$, $p = 0.56$). However, the intention to leave scores for single nurses were higher than the scores for married nurses ($U = 2276.5$, $Z = -2.43$, $p = 0.015$).

Kruskal-Wallis test showed that there was a significant difference between education levels regarding the work stressors scores (Kruskal-Wallis $H = 13.06$, $df = 2$, $p = 0.001$) which revealed that the work stressors had been scored high to low respectively by diploma, bachelor, and master degree holder nurses, as presented in Table 5.

Table 1 Socio-demographic and professional characteristic data (N = 154)

Demographic data		Frequency	Percent	(Minimum-maximum) Means (SD)
Age in years	(23–28)	70	45.5	(23.00–39.00)
	(29–34)	63	40.9	29.6 (3.8)
	(35–40)	21	13.6	
Gender	Male	75	48.7	
	Female	79	51.3	
Marital status	Single	70	45.5	
	Married	84	54.5	
Education level	Diploma	28	18.2	
	Bachelor	115	74.7	
	Master	11	7.1	
Number of years in practicing nursing	(1–5)	85	55.2	(1.00–18.00)
	(6–10)	53	34.4	5.75 (3.51)
	(11–15)	15	9.7	
	(16–20)	1	0.6	
Number of years in practicing nursing in current hospital	(1–5)	115	74.7	(1.00–14.00)
	(6–10)	32	20.8	3.92 (3.12)
	(11–15)	7	4.5	
Number of months practicing nursing in COVID-19 isolation unit	(6–8)	94	61.1	(6.00–13.00)
	(9–11)	57	37	8.28 (1.44)
	(12–14)	3	1.9	

Table 2 Work stressors Level

Work Stressors	Negative level		Positive level		Strong positive level		Means (SD)
	Frequency	Percent	Frequency	percent	Frequency	Percent	
Work Demands	8	5.2	131	85.1	15	9.7	3.80 (0.37)
Work–Family Conflict	3	1.9	56	36.4	95	61.7	3.55 (0.44)
Insufficient Support from Coworkers or Caregivers	11	7.1	119	77.3	24	15.6	3.08 (0.43)
Workplace Violence and Bullying	9	5.8	100	64.9	45	29.2	3.23 (0.54)
Organizational Issues	17	11	117	76	24	13	3.11 (0.46)
Occupational Hazards	14	9.1	82	53.2	58	37.7	3.14 (0.51)
Difficulty Taking Leave	10	6.5	107	69.5	37	24	3.11 (0.49)
Powerlessness	4	2.6	80	51.9	70	45.5	3.34 (0.49)
Unmet Basic Physiological Needs	24	15.6	118	76.6	12	7.8	2.86 (0.46)
Total work stressors	5	3.2	132	85.7	17	11.0	3.17 (0.32)

Table 3 Intention to leave level

Scale	Frequency	Percent	Means (SD)	Minimum-Maximum
Intention to leave level			4.03 (0.71)	2.00–5.33
Moderate negative	10	6.5		
Slight negative	15	9.7		
Slight positive	89	57.8		
Moderate positive	33	21.4		
strong positive	7	4.5		

Relationship between work stressors and intention to leave

Pearson correlation coefficient was run to detect and determine the relationship between work stressors and intention to leave. Pearson correlation interpretation, there was a moderately positive significant relationship between the two variables ($r = 0.52$, $p < 0.001$).

Discussion

This study examines the work stressors perceived by nurses and their correlation with the intention to leave during the COVID-19 pandemic at two hospitals in Jordan, specifically within isolation units. These frontline healthcare workers faced exceptional challenges, leading to increased stress and psychological burden. The majority of the sample (85.7%) had a 'higher level of work

Table 4 Differences in work stressors and intention to leave scores according to demographic data

Variables			Mean Rank	Mann-Whitney U	Z	p value
Work Stressors	Gender	Male	78.31	2901.500	-0.221	0.825
		Female	76.73			
	Marital status	Single	89.32	2112.500	-3.009	0.003
		Married	67.65			
Intention To Leave	Gender	Male	75.41	2805.5	-0.575	0.565
		Female	79.49			
	Marital status	Single	86.98	2276.500	-2.439	0.015
		Married	69.60			

Table 5 Kruskal-Wallis test for work stressors scores

Education level	Mean Rank	Kruskal-Wallis H	df	p value
Diploma	97.80	13.068	2	0.001
Bachelor	75.98			
Master	41.73			

stressors' which means that nurses who were working at COVID-19 units were exposed to workplace stressors. This finding aligns with research by Zheng, Zhou, Qiu, Yan, Yue, Yu, Lei, Tu and Hu [24], which similarly indicated heightened stress levels among nurses during the pandemic, especially in settings treating COVID-19 patients. These investigations underscored the mental and physical burdens nurses faced as a result of heightened patient loads, extended working hours, and the persistent fear of viral infection. This outcome is expected since the nursing profession is considered a stressful profession, especially with COVID-19 pandemic. Studies emphasized that the COVID-19 pandemic was a stressful event for nurses who deal with confirmed cases of COVID-19 [10, 11, 25]. Dealing with COVID-19 patients raises the stress level among nurses; this might be due to several factors such as fear of contagion, the dramatic increase in the number of patients, deficient knowledge about the virus, and fear to catch the infection and deliver it to family members.

The current study identified WD as the most commonly reported stressor among participants, consistent with prior research findings. This stressor was significantly increased by the substantial rise of COVID-19 patient cases. Throughout the pandemic, the nurse-to-patient ratio was markedly elevated, necessitating that nurses frequently assume supplementary non-nursing responsibilities to bolster the healthcare system. These findings align with the conclusions of Maraqa, Nazzal and Zink [19], who similarly noted that nurses encountered increased stress levels due to intensified work demands during the COVID-19 crisis. These findings are consistent with research highlighting nurses' unique and severe pandemic challenges. Due to increased workloads and the emotional toll of the pandemic, nurses faced burnout, compassion fatigue, and job dissatisfaction, according to studies. Numerous studies have linked workload and

staffing shortages to nurses' stress and burnout during the pandemic [26, 27].

In this study, nurses ranked WFC second in stress. Previous research have shown that nurses struggle to balance work and family. Rotating shifts in nursing were a primary cause of WFC. These schedules sometimes interrupt nurses' social lives and prevent them from spending time with their family on weekends, vacations, and evenings. Due to coworker illness, nurses must work greater hours to fill staff shortages, which adds to the burden. Ekici, Cerit and Mert [28] also found that rotating shifts and long hours negatively affected nurses' work-life balance. Stress and fatigue from tight schedules affect nurses' capacity to maintain healthy familial and social ties outside of work. Ekici, Cerit and Mert [28] noted that these work-related pressures can lead to burnout, job dissatisfaction, and worse quality of life for nurses, especially if extra work hours are not compensated with recovery or social time.

The third stressor found in the study was PL, representing the emotional burden faced by healthcare workers when interacting with suffering and ill patients. This finding is especially pertinent in relation to the COVID-19 pandemic, as it aligns with the increased stress and trauma encountered by healthcare workers due to the influx of patients, particularly those who were seriously ill or deceased. The rise of COVID-19 cases in Jordan resulted in a significant increase in the mortality rate among patients, presumably fostering emotions of helplessness and powerlessness among healthcare workers, thereby intensifying their stress and emotional fatigue. This result is consistent with findings from Blanco-Donoso, Moreno-Jiménez, Amutio, Gallego-Alberto, Moreno-Jiménez and Garrosa [29] reported that healthcare workers, particularly nurses, were deeply affected by the constant exposure to patients in critical conditions, leading to emotional burnout, feelings of powerlessness, and a sense of psychological distress. This shared experience of powerlessness reflects the cumulative emotional burden placed on nurses, especially in the face of the rapid escalation of the pandemic.

Workplace violence and bullying (WVB) have long been shown to stress nurses and cause physical,

psychological, and professional problems. According to earlier studies, nurses reported WVB, especially in high-stress contexts like emergency rooms (EDs). According to Guissi, Pinho, Vieira, Ranali, Martins, Bandini and de-Lucca [30], coworker disrespect increases job stress. A poisonous work environment and heightened emotional and psychological distress among healthcare personnel are caused by unprofessional behavior, including bullying and verbal abuse, according to the study. This supports the recent findings that WVB directly affects nurses' stress levels. Nursing well-being is shaped by workplace culture and relationships, and a bad work environment can worsen pressures that harm physical and mental health. In addition, Al-Ghabeesh and Qattom [31] found that 90% of emergency department nurses were bullied, highlighting the problem in nursing. In emergency care, when patient turnover, important decision-making, and significant work pressure are common, bullying was shown to be severe and frequent. Our study found that ED nurses are bullied by colleagues and patients, which leads to burnout and work dissatisfaction. Targeted interventions may be needed to address bullying in EDs due to its prevalence.

In our analysis, more than half of the participants had a slightly positive level of intention to leave, which means nurses who work at the COVID-19 unit had the intent to quit their job and are more likely they will in the future. 21.4% of the sample had a moderately positive intention to leave level. These outcomes are expected because the clinical practice of nursing at COVID-19 units is stressful. Our finding align with Labrague and de Los Santos [20], who revealed that an increased level of fear of COVID-19 was associated with decreased job satisfaction, increased psychological distress, and increased organizational and professional intentions to leave. High work demands, a high number of COVID-19 patients, and fear of COVID-19. Additionally, quarantine conditions might influence nurses to be more overworked, stressed, and had low job satisfaction. This might push nurses to think about leaving their jobs.

This study found a significant negative relationship connected the work stressors scores with nurses' ages, and the experience duration in each nursing, current hospital, and in COVID-19 isolation units. The finding might be explained as that younger and less experienced nurse do not yet acquire effective coping mechanisms with such stressors as older and more experienced nurses. Furthermore, nurses who hold high education levels had more psychological and cognitive development in interpretation and coping with stressors than nurses who hold less level of education. For marital status, single nurses had a high level of stressors than married nurses because single nurses during the COVID-19 pandemic were forced to cover the work schedule in longer shifts than married

nurses. These results were supported by studies [17, 32]. Our findings contradict to Higazee, Rayan and Khalil [33] who reported that being married with high education level scored relatively high levels of job-related stress.

This study found a significant negative relationship connected the intention to leave with nurses' ages, and experience duration in each of the nursing, current hospital, and COVID-19 isolation units. This might be explained by the fact that younger and less experienced nurses are more likely ready to take the risk of quitting their occupational position because there is a strong perception that they can easily find another job. Further, there is a significant difference in scoring for marital status where single nurses recorded high scores of intentions to leave than married nurses because married nurses had more responsibilities toward their families. Education levels had also a significant difference in the scoring of intention to leave, whereas participants who hold higher education degrees had a lower intention to leave score. Furthermore, nurses who hold higher education degrees had other administrative roles besides working with patients in the workplace, and thus their contact with patients is less than nurses who hold less degree of education. These results are consistent with studies reported that being young was one of the major factors that contributed to the intention to leave among nurses [18]. Yáñez, Afshar Jahanshahi, Alvarez-Risco, Li and Zhang [34] asserted that older healthcare providers had lower levels of intention to leave compared to their younger colleagues. These results are not going in line with Nashwan et al., who found that age, marital status, and educational level had no significant differences in intention to leave [35].

Our findings showed that work stressors have a significant positive relationship with the intention to leave. This could be explained as nurses who have more work stressors may not be satisfied with their job which led them to leave their work. On the other hand, working in COVID-19 units may contribute to psychological distress and dissatisfaction that lead to nurses' intention to leave. A previous study asserted that work stressors were a path for the intention to leave whereby stressors led to job dissatisfaction and leaving the profession [36]. In general, these findings are consistent with Labrague and de Los Santos [20]. Regarding the relationship between each work stressor and intention to leave, there were significant positive correlations between all work stressors and intention to leave with differences in the strength of the correlation. Previous research has also shown that organizational factors like leadership and career advancement had an excessive impact on the intention to leave [37]. Nursing students should be well prepared for working under pressure, dealing with work stressors, and working during crisis such as COVID-19. Therefore, stress

management and crises courses should be integrated with the nursing curricula of undergraduate students to help them in dealing with such crises [38, 39].

The generalizability of the findings is limited by several factors. First, the technique of convenience sampling limits the ability to generalize findings beyond the studied population. Second, the study exclusively includes governmental institutions, with no private or military hospitals included. This may restrict the generalizability of the findings to various healthcare sectors. Third, the findings might not be generalized to other contexts because they were based on nurses working in COVID-19 isolation units. The online survey may have been avoided by nurses who don't use the Internet or follow technology. This constraint might bias selection and exclude non-technical nurses.

Furthermore, response bias might occur when using self-report questionnaires since participants might have given less thoughtful or socially desirable replies. To further understand stress and intention to leave, future studies should include resilience, emotional intelligence, and burnout. Literature increasingly acknowledges these aspects as important to nurses' mental health and career choices. Such variables would provide a more comprehensive view of how individual and organizational factors affect nurses' results.

Implications and recommendations

This study's findings present significant insights into the correlation between nurses' perceptions of work stressors and their intent to leave during the COVID-19 pandemic, especially in isolation units. The study indicates that the majority nurses perceive work stressors, particularly WFC, in a positive light, and that the intention to leave is marginally and positively connected with work stressors. These findings underscore the necessity for healthcare organizations to mitigate work-related stressors, particularly through the implementation of interventions such as stress management training, mental health support, and flexible scheduling. Advanced training and leadership opportunities should be offered by healthcare organizations to assist nurses in managing stress. Moreover, healthcare organizations have to develop policies that implement systemic stresses, including workload, resource restrictions, and mental distress, with the objective of fostering a supportive work environment and enhancing work-life balance. Future research ought to examine the enduring effects of work stressors on nurse retention, utilizing longitudinal studies to investigate variables such as job satisfaction, professional development, and organizational culture, thereby enhancing comprehension of the influence of work stressors on nurse retention over time.

Conclusion

This study aimed to explore Jordanian nurses' perceptions of work stressors and their intention to leave, specifically during the COVID-19 pandemic in isolation units, and to investigate the relationship between these variables. The findings indicated that the majority of nurses reported positive levels of work stressors, with a substantial proportion reporting strong positive levels of WFC. In the same vein, a substantial proportion of nurses exhibited positive intention to leave. Demographics affected work stressors and intention to leave. Work stressors and their intention to leave were higher for single nurses than married nurses. In addition, nurses with lower education levels reported higher stress levels. Customized therapies based on individual features are needed. Notably, the investigation found a moderate, positive, and statistically significant correlation between work stressors and intention to leave. This suggests that the probability of nurses intending to leave their positions increased as work stressors increased. The findings show that nurses who may be more sensitive due to personal or professional circumstances need focused stress-reduction techniques. Nurse retention and healthcare system sustainability amid future public health catastrophes depend on supportive and well-resourced workplaces.

Abbreviations

NOSS	Nurses Occupational Stressors Scale
TIS	Turnover Intention Scale
IRB	Institutional Review Board
SPSS	Statistical Package for Social Science
WD	Work Demands
WFC	Work–Family Conflict
IS	Insufficient Support from Coworkers or Caregivers
WVB	Workplace Violence and Bullying
OI	Organizational Issues
OH	Occupational Hazards
DTL	Difficulty Taking Leave
PL	Difficulty Taking Leave
UPN	Unmet Basic Physiological Needs

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Author contributions

IAA: conceptualization, validation, investigation, writing—original draft preparation, visualization, project administration. GMA: conceptualization, writing—original draft preparation, data curation. OAO: conceptualization, investigation, writing—review and editing. AN: methodology, investigation, data curation, writing—review and editing. JFA: methodology, validation, formal analysis, data curation, writing—original draft preparation, supervision, project administration. KA: validation, writing—original draft preparation. AHK: formal analysis, writing—review and editing. SAA: methodology, formal analysis, investigation. SMA: methodology, validation, supervision. MMA: writing—original draft preparation, supervision. ASA: data curation, writing—review and editing. All authors have read and approved of the final manuscript.

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Data availability

The dataset supporting the conclusions of this article is included within the article.

Declarations

Ethics approval and consent to participate

This study was approved by the Institutional Review Board (IRB) at Zarqa University (ref.nr: 1/2021). The study was carried out in accordance with the 1964 Helsinki Declaration. After explaining the study's purpose, nurses provided signed informed permission. The confidentiality of the data was respected. The study subjects' anonymity was kept. Participants in the study were given the option to withdraw at any moment with no repercussions.

Consent for publication

Not applicable.

Competing interests

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References

1. Babapour AR, Gahassab-Mozaffari N, Fathnezhad-Kazemi A. Nurses' job stress and its impact on quality of life and caring behaviors: a cross-sectional study. *BMC Nurs*. 2022;21:75.
2. Tsegaw S, Getachew Y, Tegegne B. Determinants of work-related stress among nurses working in private and public hospitals in Dessie City, 2021: comparative cross-sectional study. *Psychol Res Behav Manag*. 2022;15:1823–35.
3. Tabur A, Choudhury A, Emhan A, Mengenci C, Asan O. Clinicians' social support, job stress, and intent to Leave Healthcare during COVID-19. *Healthcare*. 2022;10:229.
4. Bardhan R, Heaton K, Davis M, Chen P, Dickinson DA, Lungu CT. A Cross Sectional Study evaluating psychosocial job stress and health risk in Emergency Department nurses. *Int J Environ Res Public Health* 2019, 16.
5. Jarrar Mt B, Ali N, Shahrudin R, Al-Mugheed K, Aldhmadi BK, Al-Bsheish M, AlSyouf A, AlBaker W, Alumran A. The impact of the working hours among Malaysian nurses on their Ill-Being, Intention to leave, and the Perceived Quality of Care: a cross-sectional study during the COVID-19 pandemic. *J Multidisciplinary Healthc*. 2023;16:119–31.
6. AbuAlRub R, El-Jardali F, Jamal D, Abu Al-Rub N. Exploring the relationship between work environment, job satisfaction, and intent to stay of Jordanian nurses in underserved areas. *Appl Nurs Res*. 2016;31:19–23.
7. O'Brien-Pallas L, Duffield C, Hayes L. Do we really understand how to retain nurses? *J Nurs Manag*. 2006;14:262–70.
8. Rayan A, Sisan M, Baker O. Stress, Workplace violence, and Burnout in nurses Working in King Abdullah Medical City during Al-Hajj season. *J Nurs Res*. 2019;27:e26.
9. Misra A. Doctors and healthcare workers at frontline of COVID 19 epidemic: admiration, a pat on the back, and need for extreme caution. *Diabetes Metab Syndr*. 2020;14:255–6.
10. Kang L, Ma S, Chen M, Yang J, Wang Y, Li R, Yao L, Bai H, Cai Z, Xiang Yang B, et al. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: a cross-sectional study. *Brain Behav Immun*. 2020;87:11–7.
11. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, Ng CH. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*. 2020;7:228–9.
12. Nyarko-Sampson E, Nyarko-Sampson M. Sources and effects of stress on work performance, and coping strategies among nurses at University of Cape Coast Hospital, Cape Coast, Ghana. *Br J Educ*. 2017;5:24–38.
13. Kim Y, Han K. Longitudinal associations of nursing staff turnover with patient outcomes in long-term care hospitals in Korea. *J Nurs Manag*. 2018;26:518–24.
14. Bae SH. Noneconomic and economic impacts of nurse turnover in hospitals: a systematic review. *Int Nurs Rev*. 2022;69:392–404.
15. Alnaeem MM, Hamdan-Mansour AM, Nashwan AJ, Abuattallah A, Al-Hussami M. Healthcare providers' intention to leave their jobs during COVID-19 pandemic: a cross-sectional study. *Health Sci Rep*. 2022;5:e859.
16. Shreffler J, Petrey J, Huecker M. The impact of COVID-19 on Healthcare Worker Wellness: a scoping review. *West J Emerg Med*. 2020;21:1059–66.
17. Ali H, Cole A, Ahmed A, Hamasha S, Panos G. Major stressors and coping strategies of frontline nursing staff during the outbreak of Coronavirus Disease 2020 (COVID-19) in Alabama. *J Multidiscip Healthc*. 2020;13:2057–68.
18. Nashwan AJ, Abujaber AA, Villar RC, Nazarene A, Al-Jabry MM, Fradelos EC. Comparing the Impact of COVID-19 on Nurses' Turnover Intentions before and during the Pandemic in Qatar. *J Pers Med* 2021, 11.
19. Maraqa B, Nazzal Z, Zink T. Palestinian Health Care workers' stress and stressors during COVID-19 pandemic: a cross-sectional study. *J Prim Care Community Health*. 2020;11:2150132720955026.
20. Labrague LJ, de Los Santos JAA. Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *J Nurs Manag*. 2021;29:395–403.
21. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, He L, Sheng C, Cai Y, Li X, et al. Mental health care for medical staff in China during the COVID-19 outbreak. *Lancet Psychiatry*. 2020;7:e15–6.
22. Pornel JB, Balinas VT, Saldaña GA. Nearest integer response from normally distributed opinion model for likert scale. *Philippine Stat*. 2011;60:87–103.
23. Michaels CE, Spector PE. Causes of employee turnover: a test of the Mobley, Griffeth, Hand, and Meglino model. *J Appl Psychol*. 1982;67:53–9.
24. Zheng R, Zhou Y, Qiu M, Yan Y, Yue J, Yu L, Lei X, Tu D, Hu Y. Prevalence and associated factors of depression, anxiety, and stress among Hubei pediatric nurses during COVID-19 pandemic. *Compr Psychiatry*. 2021;104:152217.
25. Huang L, Lei W, Xu F, Liu H, Yu L. Emotional responses and coping strategies in nurses and nursing students during Covid-19 outbreak: a comparative study. *PLoS ONE*. 2020;15:e0237303.
26. Guttormson JL, Calkins K, McAndrew N, Fitzgerald J, Losurdo H, Loonsfoot D. Critical care nurse burnout, Moral Distress, and Mental Health during the COVID-19 pandemic: a United States Survey. *Heart Lung*. 2022;55:127–33.
27. Wang P, Yu X, Wu T, Chen D. Prevalence and influencing factors of vicarious traumatization among Frontline Healthcare Workers during COVID-19 pandemic. *J Aggress Maltreatment Trauma*. 2022;31:779–97.
28. Ekici D, Cerit K, Mert T. Factors that influence nurses' work-family conflict, job satisfaction, and intention to leave in a private hospital in Turkey. *Hosp Practices Res*. 2017;2:102–8.
29. Blanco-Donoso LM, Moreno-Jiménez J, Amutio A, Gallego-Alberto L, Moreno-Jiménez B, Garrosa E. Stressors. Job resources, fear of Contagion, and Secondary Traumatic Stress among Nursing Home Workers in Face of the COVID-19: the case of Spain. *J Appl Gerontol*. 2021;40:244–56.
30. Guissi PC, Pinho M, Vieira I, Ranali F, Martins DA, Bandini M, de-Lucca SR. Psychosocial factors at work and stress among the nursing staff of a central sterile services department. *Rev Bras Med Trab*. 2019;17:499–505.
31. Al-Ghabeesh SH, Qattom H. Workplace bullying and its preventive measures and productivity among emergency department nurses. *BMC Health Serv Res*. 2019;19:445.
32. Mosadeghrad AM. Occupational stress and turnover intention: implications for nursing management. *Int J Health Policy Manag*. 2013;1:169–76.
33. Higazee MZA, Rayan A, Khalil M. Relationship between job stressors and organizational support among Jordanian nurses. *Am J Nurs Res*. 2016;4:51–5.
34. Yáñez JA, Afshar Jahanshahi A, Alvarez-Risco A, Li J, Zhang SX. Anxiety, Distress, and Turnover Intention of Healthcare Workers in Peru by their Distance to the epicenter during the COVID-19 Crisis. *Am J Trop Med Hyg*. 2020;103:1614–20.
35. Nashwan AJ, Abujaber AA, Mohamed AS, Villar RC, Al-Jabry MM. Nurses' willingness to work with COVID-19 patients: the role of knowledge and attitude. *Nurs Open*. 2021;8:695–701.
36. Al Zamel LG, Lim Abdullah K, Chan CM, Piau CY. Factors influencing nurses' intention to leave and Intention to stay: an integrative review. *Home Health Care Manage Pract*. 2020;32:218–28.

37. Alhamwan M, Mat N, Al Muala I. The impact of organizational factors on nurses turnover intention behavior at Public Hospitals in Jordan: how does Leadership, Career Advancement and pay-level influence the turnover intention behavior among nurses. *J Manage Sustain* 2015, 5.
38. Al-Rawajfah OM, Al-Mugeed KA, Alaloul F, Al-Rajaibi HM, Al Omari O. COVID-19 knowledge, attitude, and precautionary practices among health professional students in Oman. *Nurse Educ Pract*. 2021;52:103041.
39. Al-Mugheed K, Al Rawajfah O, Bani-Issa W, Rababa M. Acceptance, attitudes, and barriers of vaccine booster dose among nursing students: a multicounty survey. *J Nurs Manag*. 2022;30:3360–7.

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