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EMPIRICAL STUDY ON MENTAL STRESS AMONG HEALTHCARE STAFFS AND THE INFLUENCING WORKPLACE STRESSORS

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A B S T R A C T

This study provides empirical indicators on the presence of alarming mental stress levels among healthcare staffs as a result of the work environment. The study uses a comprehensive survey to identify work stressors and to addresses stress symptoms and coping behaviours among the healthcare givers in Jordan as a case study. The study aims to direct management's attention to work conditions that largely contribute to increasing mental stresses among their healthcare staffs. Moreover, the study identifies out stress symptoms that employees, team leaders and managers should not ignore to help their fellow workers cope with their stresses through legitimate coping behaviours. A total of 300 responses from 176 nurses, 45 technicians and 79 physicians from three hospitals with high patient flows were included in the statistical analyses. Results demonstrate that stressors related to high job demands, especially long working hours, have the highest impact on the development of stress among surveyed caregivers. Job-demand stressors were the most significant predictor of the symptom recurrence level with a $\beta = 0.334$. Continual tiredness and frequent headaches were the most frequent stress symptoms. Taking unprescribed medications, smoking tobacco, and faking reasons to take time off were the most common behaviours to relieve stress. This study contributes to the literature theoretically and practically. From a theoretical perspective, the study provides a comprehensive survey that captures the symptoms, relieve behaviours and work-related causes of stress. From the practical perspective, the study helps care providers and healthcare managers address and resolve work stressors and help their staff adopt healthy behaviours to relieve their stresses.

K E Y   W O R D S
work stress, mental stress, work stressors, healthcare, ergonomics

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INTRODUCTION

Work is a primary source of income for many individuals. An ergonomic work environment enhances the safe interaction between the worker and other components of the work system. Unsafe work conditions may result in negative consequences on the physical and mental health of the worker (Gartner et al., 2010; Haque, Sher & Urbański, 2020; Sariwulan, Capnary & Agung, 2019). Work-related mental stress is a worldwide epidemic that negatively affects organi-

sations and employees, especially in healthcare professions. Mental stress can negatively affect the health and behaviour of workers, especially when the psychological ability consumed by continued stress exceeds the level to which the worker's body can accommodate (Conway et al., 2008).

Some professions are inherently more stressful than others, especially those that involve human contact and require rapid decision-making, especially when those decisions have serious impacts (Muncer et al., 2001). The healthcare environment often implicates high levels of acuity of patients and rapid change conditions that make medical care processes complex. Even for highly experienced caregivers, this complexity usually is coupled with the potential for medical errors and inherent human performance limitation. Accordingly, healthcare professions are considered some of the most stressful jobs (Favrod et al., 2018). Patient-care professionals or healthcare givers experience higher levels of mental stress compared to other workers. Healthcare givers are responsible for delivering high-quality, safe, timely, and equitable services to patients. They are required to meet the cognitive demands necessary to administer complex treatments and medicines. They are expected to respond to patient emotions and face patient deaths. In addition, they are required to cope with the rapidly changing environment and work conditions. Literature provides empirical evidence on the adverse consequences of work-related mental stress on the well-being of caregivers that manifest in the form of illness, adverse behaviours, as well as poor job satisfaction, the impact on patient health due to medical errors and impaired quality of care, and consequently, negative effects on a healthcare organisation because of reduced quantity and quality of work.

This study presents findings of a self-administrated survey dedicated to identifying work stressors with the most impact on Jordanian healthcare givers. In addition, it surveyed healthcare givers for stress symptoms, the impacts on their ability to work, and their coping behaviours to relieve stress. Female and male healthcare givers with various job titles and years of experience from different care units were surveyed. The survey covered three major hospitals with high patient flows in northern Jordan. The hospitals are located in different cities and serve large numbers of in- and out-patients every day. The study hypothesises that several combinations of stress symptoms that indicate a level of mental stress that needs attention can be traced by individual caregivers, their fellow workers, and healthcare managers to help preserve the

well-being of staffs. Moreover, the study hypothesises that individuals suffering from stress symptoms may incline to illegitimate coping behaviours to help their selves reduce the symptoms they suffer. Furthermore, the study hypothesises that several workplace conditions, including many managerial practices, largely contribute to increasing stress among staffs. This study contributes theoretically and practically to the literature. From a theoretical perspective, the study provides a comprehensive survey that captures the symptoms, coping behaviours and work-related causes of stress. From the practical perspective, the study helps care providers and healthcare managers address and resolve work stressors and help their staff adopt healthy behaviours to relieve their stress. This study calls upon healthcare managers to better account for the mental health of their staffs while modifying strategic policies and procedures.

The remainder of this paper is organised as follows. Section 2 reviews the literature on work-related stressors and stress symptoms among healthcare givers. Section 3 presents the study method. Results are presented and discussed in Section 4. Section 5 concludes the paper.

1. LITERATURE REVIEW

Stress is an unavoidable aspect of the work environment and a product of the interaction between a person and his/her environment. The World Health Organization (WHO) classified occupational stress as a worldwide epidemic (Avey et al., 2009). According to Hamdan-Mansour et al. (2011), stress is any physical or psychological demand beyond the norm that indicates a variation between what is optimal and what really exists. Suresh et al. (2013) defined stress as the particular relation between the person and the environment that arises when exceeding the person's resources as well as threatening his/her well-being. In the literature, the Demand Control Model (DCM) and the Effort–Reward Imbalance (ERI) model are used to explain the causes of work-related stress. According to Laschinger et al. (2001), DCM states that any work that combines high job demands with low control is predicated on causing a high level of job stress with psychological and physical consequences. Job demands are the psychological stressors present in the work environment. Examples of job demand include work volume, work pace, level of difficulty, level of concentration needed, and the presence of conflicting demands. Decision control consists of skill discretions

that develop the individual's special abilities and decision authority that authorises the individual to make work-related decisions. On the other hand, the ERI model states that mental stress and its health consequences arise when a high degree of effort is not reciprocated with adequate rewards in the form of pay, status and opportunities for advancement (Calnan et al., 2016). To decrease the negative consequences of work-related mental stress on healthcare workers and their organisations, many researchers proposed various interventions, including the Mindfulness-based Stress Reduction (MBSR) approach, the Mindfulness-based Cognitive Therapy (MBCT) programme, the Mindfulness Self-care and Resiliency (MSCR) programme (Slatyer et al., 2017), and the Stress Management and Resiliency Training programme (SMART) (Werneburg et al., 2018). According to Werneburg et al. (2018), using SMART showed significant improvement in resiliency, quality of life, and health behaviours among participants.

Researchers believe that the experience of job stress has adverse consequences on the health of the workers, on their community, and on their organisations. Several researchers have reported many adverse physiological, psychological or emotional and behavioural consequences of work-related stress. Common physiological effects include but are not limited to headache, increase in blood pressure, palpitations or increase in heart rate, tightness in the chest, gastrointestinal upset, significant weight loss or weight gain, shortness in breath, cardiovascular disorders, neck–shoulder pain, stomach problems and sweating. Known psychological effects include nervousness, insomnia, anxiety, fatigue/exhaustion, lack of interest, feelings of worthlessness and hopelessness, low confidence, and burnout, a syndrome that combines emotional exhaustion, depersonalisation and low professional efficacy if stress levels exceed a person's ability to cope over an extended period. Behavioural symptoms include sleep disturbance, unhealthy eating, eating disorders, snapping and arguing with others, being fearful and aggressive, irritable and hyper startled response, absenteeism and turnover, difficulties of concentration and communication, alcohol and drug abuse and smoking (Freimann & Merisalu, 2015). Moreover, stress can reduce job satisfaction and, as a result, decrease commitment to the job, productivity, quality of work, and concern for safety, colleagues and the organisation. Moreover, stress may increase accidents and complaints from customers (Karadzinska-Bislimovska et al., 2014). In healthcare, Lin et al. (2007) showed that (49.6%) of nurses in

a medical centre in Taiwan, who had high levels of stress, had experienced a primary headache. King et al. (2009) surveyed 435 nurses in the state of Ohio to examine the relationship between job stress level and disordered eating behaviours. The findings showed that the level of stress negatively affected eating behaviours and that nurses with a high level of stress and low level of body satisfaction had a higher level of disordered eating behaviours. Jordan et al. (2016) surveyed 177 full-time and part-time nurses in the USA to assess the combined impact of perceived stress and perceived coping adequacy on the health status and health behaviours of nurses. Feeling nervous, anxious, or on edge was the most reported symptom, and the group of high stress/poor coping nurses had the poorest health outcomes and the highest risk health behaviours compared to others. Gleeson et al. (2019) stated that work stress could be related to drinking alcohol and taking antidepressants or anxiolytics.

Several studies investigated the negative impact of poor work conditions on healthcare staffs. Studies investigated the influence of a personal profile, including the job function and work department, and stress. Banovcinova and Baskova (2014) suggested three categories of stressors in healthcare: personal (e.g., the incapacity to manage and control the work), interpersonal (e.g., relationships with doctors, managers, and co-workers), and stressors of working environment or organisational stressors (e.g., modern technology, workload, care for patients; in particular facing pain, suffering and death of patients, and the conflict of roles). Freimann and Merisalu (2015) used version two of the Copenhagen Psychosocial Questionnaire (COPSOQ II) to measure psychosocial work risk factors and mental health problems amongst 404 nurses at the university hospital in Estonia. The findings showed that work-related psychosocial risk factors with the highest mean scores were the meaning of work, role clarity, mutual trust between employees, and social relationships at work. Most indicators statistically correlated with stress and burnout and were in contrast with depressive and somatic symptoms. Moreover, social relationships at work, predictability, rewards, and trust in management correlated with all studied mental health problems. Quantitative demands, work pace, emotional demands, the meaning of work, role conflicts, role clarity, predictability, rewards, quality of leadership, social support from colleagues, social support from supervisor, social relationships at work, mutual trust between employees, trust regarding management, and justice and

respect were inversely correlated with stress, and all indicators were correlated with burnout except possibilities for development, role clarity, mutual trust between employees, and social inclusiveness. The authors suggested that there is an urgent need to amend current working practices to reduce the occurrence of mental health problems among nurses. Cheng and Cheng (2017) investigated the differences in psychosocial work conditions between a group of 19000 Taiwanese general workers and a group of 349 healthcare workers. The authors used the Chinese version of the Job Content Questionnaire to assess psychosocial work conditions and the five-item Brief Symptoms Rating Scale (BSRS-5) to assess the mental health status of participants. Results showed that healthcare workers have a higher prevalence of mental disorders than general workers. Moreover, lower justice, heavier psychological demands, experiences of violence, and job insecurity were associated with a higher risk for a minor mental disorder in healthcare workers. The authors suggested that authorities should account for psychosocial work conditions when discussing mental health problems in healthcare, provide support to the affected workers and encourage them to seek mental health treatments. Halpin et al. (2017) used the Nursing Stress Scale (NSS) to survey newly qualified nurses in the UK to determine work-related stressors over their first 12 months post-qualifying. Results showed that workload, inadequate staffing, and managing multiple roles were the most reported stressors. On the other hand, results indicated that being part of a good team provided a supportive and facilitative work environment. Gholamzadeh et al. (2011) surveyed a sample of 90 Emergency Department (ED) nurses from three large hospitals in Shiraz to investigate the sources of job stress and the adopted coping strategies. The authors investigated correlations among personal profile, including gender, years of experience, and marital status, sources of job stress, and coping strategies. Results showed that 86.7% of respondents were female between 23–50 years old, major sources of stress were problems related to the physical environment, workload, dealing with patients or their relatives, and handling their anger or aggressive behaviour, being exposed to health and safety hazards, lack of support by nursing administrators, and most common coping strategies were self-controlling and positive reappraisal. Callaghan et al. (2000) used the Anxiety Stress Questionnaire (ASQ) to investigate stress and coping among 168 nurses from different care departments in Hong Kong. Results showed that paediatric nurses reported the

highest stress level, nurses at the lower grades reported higher stress levels than nurses at the higher grades, single nurses had marginally higher stress scores than married nurses, and females had slightly higher stress scores than males. In addition, major stressors were nursing issues (38.1%), including too much work, dealing with emergencies, and responsibilities inherent in the job, interpersonal relationships (14.6%), including dealing with patients and relatives relationships with colleagues and dealing with ward managers and supervisors and dealing with hospital administration (12%), including inadequate staff, overcrowded ward, and poor working environment. On the other hand, seeking support from friends and colleagues, using different cognitive strategies, and leisure activities were the most used coping strategies to deal with stress. In addition, results indicated that the stress level negatively correlated with the sickness level. Boyacı et al. (2014) used 27 questions from the literature to investigate the level of stress, influencing factors, and coping strategies among 103 physicians, nurses, health technicians, allied health personnel, and administrative services personnel. Results showed that inequitable distribution of tasks, work ignored by others, the widespread use of gossip in the workplace, fear of patient dissatisfaction and complaints, relations with management, and injustice in performance evaluation were the leading stress causes. In terms of coping strategies, the most reported were "I endure in silence and burn myself out", "I try to solve it on my own", and "I share it with my best friends or family and try to find a solution". In addition, results indicated that stress factors and coping strategies significantly varied with occupation, gender, and business of a lifetime. The authors recommended distributing the work fairly among the staff, provide adequate in-service training, provide a clear job description, involve employees in the decisions made, and provide regular training for workers to cope with stress. Unsal Atan et al. (2013) investigated the consequences of experienced violence among 441 nurses from different units in Turkey. 60.8% of the nurses agreed that they were victims of verbal and/or physical violence from staffs, patients, and visitors. In addition, results reported a negative relationship between violence and the health of nurses. Forms of negative impacts included pain, palpitations, stress, feeling worthless, and disappointment. Finchilescu et al. (2018) used a self-reported questionnaire to study the relationship between bullying at the workplace and mental wellbeing, job satisfaction, and propensity to leave among 102 nurses from a public hospital in Zimbabwe.

Results indicated that bullying had a significant impact on nurses' mental well-being and that higher levels of bullying were negatively associated with job satisfaction and positively associated with the propensity to leave.

Based on Boran et al. (2012), a total of 402 Jordanian participants (101 physician specialists, 52 general practitioners, 126 dentists, and 123 pharmacists) were interviewed to complete the General Health Questionnaire (GHQ-12) and a socio-demographic questionnaire and to answer other questions about job stress. Results showed that general practitioners reported the highest degree of stress, and physician specialists reported the lowest level of stress. Most frequently, symptoms were a headache, irritability, and consuming more energy drinks. Moreover, a high level of stress was significantly correlated with long working hours, being a woman, and the position or job title. The authors suggested that staffs must be trained to enable them to better cope with stress. Hamdan-Mansour et al. (2011) surveyed work-related stress among 92 mental health nurses, of which 72% were female, using the Mental Health Professionals Stress Scale (MHPSS), and they used the Social Support Scale (SSS) to investigate organisational support. The results showed that mental health nurses experienced a moderate level of stress and a low level of support from their supervisors and that nurses who perceived a low level of support from their supervisor were more likely to experience a higher level of work stress. A conflict with other health professionals and the lack of resources and relationships were the most frequent stressors reported in the study. The authors suggested that improving collaborative work conditions and providing appropriate support may reduce stress (. Hamaideh and Ammouri (2014) used the Nursing Stress Scale (NSS) to survey stress among 464 nurses from public and private hospitals. Results showed that nurses perceived more stress due to inadequate preparation, uncertainty concerning treatment, conflicts with physicians, conflicts with other nurses, and the lack of support. In addition, results indicated that nurses in public hospitals perceived higher stress than those in private hospitals. The authors recommended training staffs to enhance teamwork, communication, family interactions, and stress management. Masa'Deh et al. (2018) used an Arabic version of the Perceived Stress Scale 10-Items questionnaire (APSS10) to measure the stress level among 166 inpatients, outpatient, and addiction psychiatric nurses in Jordan of which 90.8% had a Bachelor's degree. Results showed that inpatient psychiatric

nurses had the highest level of stress and that 60.12% of surveyed nurses reported aggression/violent behaviour from patients as the prime stressor. The used regression model indicated that the lack of resources, aggression/violent behaviour from patients, the lack of training, and long working hours were correlated with a high level of stress. The authors suggested scheduling shorter shifts and more attention to the needs of psychiatric nurses to improve the performance and the quality of patient care. Hasan and Tumah (2019) used the Devilliers, Carson and Leary (DCL) stress scale, the Psych Nurse Methods of Coping questionnaire, and the Beck Depression Inventory (BDI) to examine workplace stress, coping strategies, and psychiatric distress among 119 psychiatric nurses. Results showed that nurses experienced moderate levels of stress and psychiatric distress and that the highest stress scores were associated with dealing with physical and verbal abuse from patients or others, insufficient training to work with such patients, and dealing with potential suicide patients. On the other hand, the most used coping strategies were reminding self that the work will be appreciated and discussing work problems with colleagues. The authors suggested implementing training programmes to help psychiatric nurses manage occupational stress more effectively. Hamaideh et al. (2008) surveyed 464 nurses from 13 hospitals to investigate the stress level using the Nursing Stress Scale (NSS) and stressors and social supportive behaviours using the Inventory of Social Supportive behaviours (ISSB). The study accounted various factors, including gender, shift worked, education, model of nursing care provision (primary, team, functional, and unclear model), type of hospital (private, government or teaching), experience, and ward/unit's organisational structure (matrix, vertical, horizontal and unclear structure). The results showed that frequent stressors included death and dying (mean=16.13) and workload (mean=14.53). In addition, participants designated guidance as the most social supportive behaviour provided to stressed nurses. Moreover, results showed significant correlations between stressors, social supportive behaviours, level of education, shift worked, and model of nursing care provision, as well as between social supportive behaviours, units' decision-making style and commitment to work. The authors recommended that nursing administrators should intervene to decrease the level of stress among nurses and to provide different styles of social support to help nurses cope with stress.

Literature indicates that work-related stress gained a lot of attention worldwide. Published studies

revealed work-related stress levels, triggers and causes, consequences, and coping strategies used to reduce the effects of this epidemic. This study builds on findings from the literature and utilises pilot feedback from caregivers to construct a comprehensive survey of stress symptoms, coping strategies, and influencing factors or stressors among Jordanian healthcare givers.

2. RESEARCH METHODS

For the purposes of this study, a self-administered questionnaire was developed based on published literature, pilot studies and suggestions of specialists. The questionnaire was used to survey healthcare givers at three major northern Jordanian hospitals with high patient flows. The target population included nurses, technicians, and physicians in the emergency departments (EDs), laboratories, intensive care units (ICUs), medical-surgical units, paediatrics, obstetrics, and gynaecology.

The questionnaire had four sections. The first section surveyed four demographics of respondents. Target demographics included gender, years of experience, work unit and position or title. Section two surveyed 18 physical, mental, and behavioural, symptoms caused by stress. Respondents were asked to determine how often they experienced each symptom during the past workweek on a scale range from "never" to "several times every day". Moreover, this section included a question about the effect of the symptoms on the ability to work and another question about whether the respondent was diagnosed for these symptoms, answering "yes" or "no". Section three consisted of nine coping behaviours commonly used to relieve stress. For each stress relief behaviour, the respondent was asked to select one of four responses: "no", "considering it", "sometimes", or "frequently". Finally, section four measures the degree of contribution of work stressors. The section uses a four-point scale ranging from "not at all" to "substantial" to indicate the impacts of various elements of the work environment or work stressors on the level of stress of the respondent. Work stressors are grouped into five domains: physical work environment (4 items), management (10 items), job demands (11 items), work relationships (5 items), and exchange with patients or accompanying person (4 items).

The questionnaire was distributed to healthcare givers, and 450 individuals responded, out of which 300 responses were used in the analysis. The statistical analysis of data was performed using the Statistical Package for the Social Sciences (SPSS) version 25. Cronbach, descriptive data analyses, such as frequencies, percentages, means and standard deviations, were used to describe the demographic characteristics of the respondents, the level of experienced symptoms and the level of the perceived stress. The overall scores of sections on symptoms and stressors were calculated by averaging related items. Moreover, the Analysis of Variance (ANOVA) and t-tests were used to examine the differences between the occurrence level of symptoms and the level of perceived stress according to respondents' demographics. Pearson's correlation analysis was used to gain an initial understanding of the relationship between the perceived level of stress and the anticipated outcomes (symptoms and behaviours). Multiple linear regressions were performed to determine the best predictors of the symptom frequency and recurrence. A value of $p < 0.05$ was considered statistically significant.

3. RESEARCH RESULTS

A total of 450 responses were collected and scanned thoroughly for clean-up; 300 responses were found complete and reliable. The remaining 150 responses were excluded either because the participant left a significant proportion of the survey empty, consistently marked the same response for all questions within a section, had frequent multiple responses to questions, or failed to report her/his demographics. The results obtained from the statistical analyses are shown in the Appendix tables. Table 1 summarises respondent demographics. Of the 300 participants (Table 1), 65.3% were females, 55% had five or fewer years of experience, and most of the respondents (58.7%) were nurses. Tables 2–9 showed the specific findings of the study.

To perform the above-mentioned analyses, responses were assigned a number proportional to the intended impact. E.g., responses regarding the frequency of experienced symptom (Table 2) were as follow: never (1), 1 to 2 times (2), 3 to 4 times (3), once a day or daily (4) and several times a day (5). Cronbach's alpha reliability coefficients for symptoms, coping behaviours, and stressors were 0.931, 0.793, and 0.945, respectively. Moreover, Cronbach's alpha reliability coefficient for the total scale was 0.958.

Table 2 shows descriptive statistics of symptom frequencies. The obtained results show that most of the respondents experienced a stress symptom at

Tab. 1. Characteristics of the surveyed participants (N=300)

BACKGROUND VARIABLE		NUMBER	PERCENT
Gender	Male	104	34.7%
	Female	196	65.3%
Experience	1–5	165	55.0%
	6–10	71	23.7%
	11–15	37	12.3%
	>15	27	09.0%
Unit	Emergency Department (ED)	42	14.0%
	Blood Laboratories	47	15.7%
	Paediatrics	48	16.0%
	Obstetrics and Gynaecology	57	19.0%
	Medical-Surgical units	64	21.3%
	Intensive Care Unit (ICU)	42	14.0%
Position	Nurse	176	58.7%
	Technician	45	15.0%
	Resident Doctor	36	12.0%
	Specialist Doctor	43	14.3%

Tab. 2. Descriptive statistics of symptoms frequencies

SYMPTOM	NEVER	1 TO 2 TIMES	3 TO 4 TIMES	ONCE EVERY DAY (DAILY)	SEVERAL TIMES EVERYDAY	%[a]	MEAN ± SD
Frequent headaches	50	74	73	58	45	34.3	2.913 ± 1.306
Increased heart rate	133	92	29	22	24	15.3	2.040 ± 1.248
Breathing difficulty	181	60	29	17	13	10.0	1.737 ± 1.119
Change in blood pressure	150	81	34	22	13	11.7	1.890 ± 2.093
Increased sweating	132	80	39	26	23	16.3	2.093 ± 1.266
Increased dryness of my mouth	101	84	53	31	31	20.7	2.357 ± 1.317
Change in eating patterns	71	64	64	46	55	33.7	2.833 ± 1.423
Change in sleep patterns	58	70	63	85	24	36.3	2.823 ± 1.259
Continual tiredness	29	97	72	59	43	34.0	2.967 ± 1.218
Poor concentration	34	101	78	46	41	29.0	2.863 ± 1.215
Became more anxious	51	112	75	36	26	20.6	2.580 ± 1.161
Became more emotional	75	81	64	42	38	26.7	2.623 ± 1.334
Difficulty to relax	64	87	56	44	49	31.0	2.757 ± 1.375
Feel worthless	184	44	23	25	24	16.3	1.870 ± 1.316
Feel scared	140	76	38	24	22	15.3	2.040 ± 1.256
Lost interest in everything	125	66	46	31	32	21.0	2.263 ± 1.371
Became more irritable, moody and over-reactive to what others say	87	84	50	37	42	26.3	2.543 ± 1.386
Became more negative, frustrated and believing there is no solution	132	70	38	31	29	20.0	2.183 ± 1.350

Note: %[a] the proportion of participants who reported the once everyday occurrence of symptoms or several times every day.

least once during the week preceding the survey. Moreover, close to a third of respondents experienced some of the symptoms at least once a day. Among the many daily experiences of symptoms, the most frequent were change in sleep patterns (mean=2.823; % experienced daily = 36.3%), frequent headaches (2.913; 34.3%), continual tiredness (2.967; 34%), change in eating patterns (2.833; 33.7%), difficulty to relax (2.757; 31%), and poor concentration (2.863; 29%). In addition, about 54.67% of the respondents self-diagnosed stress based on these symptoms, 2.33% were diagnosed with stress by a medical doctor, and 1.33% were diagnosed with stress by a psychiatrist. 70.4% of the 125 respondents who experienced one or more of these symptoms at least 3 to 4 times indicated that these symptoms had a moderate or high effect on their ability to work. Table 3 shows that the frequency of a symptom reoccurrence was significantly influenced by gender and years of experience. Female respondents and those with fewer years of work experience (i.e., 1 to 5) yielded the highest means among their respective groups.

Table 4 shows feedback on coping behaviours to relieve stress: taking un-prescribed medications (mean = 2.267; % using = 52%), smoking tobacco (1.980; 41.7%), and taking more leaves/vacations just to run off work" (1.960; 41.3%). On the other hand, less than 7% of participants start drinking alcohol

Tab. 3. Influence of demographics on the frequency of occurrence of reported symptoms

BACKGROUND VARIABLE		MEAN	SD	TEST VALUE	P-VALUE
Gender	Male	2.236	0.822	**-2.600 (T)**	**0.010**
	Female	2.502	0.854		
Experience	1–5	2.549	0.821	**4.728 (F)**	**0.003**
	6–10	2.368	0.848		
	11–15	2.146	0.873		
	>15	2.027	0.840		
Unit	Emergency Department (ED)	2.475	0.927	1.874 (F)	0.099
	Blood Laboratories	2.122	0.803		
	Paediatrics	2.625	0.893		
	Obstetrics and Gynaecology	2.457	0.994		
	Medical-Surgical units	2.425	0.726		
	Intensive Care Unit (ICU)	2.333	0.708		
Position	Nurse	2.495	0.847	1.938 (F)	0.124
	Technician	2.193	0.852		
	Resident Doctor	2.424	0.829		
	Specialist Doctor	2.277	0.856		

Note: items in bold are significant at the 0.05 level.

Tab. 4. Coping behaviours mean and percentage values

COPING BEHAVIOURS	NO	CONSIDERING IT	SOMETIMES	FREQUENTLY	%[a]	MEAN ± SD
Take prescribed medications	219	2	65	14	26.3	1.580 ± 0.979
Take un-prescribed medications	125	19	107	49	52.0	2.267 ± 1.166
Start smoking tobacco	169	6	87	38	41.7	1.980 ± 1.168
Start drinking alcohol	281	3	14	2	05.3	1.123 ± 0.492
Start smoking marijuana	283	2	10	5	05.0	1.123 ± 0.525
Take illegible drugs	276	4	15	5	06.7	1.163 ± 0.581
Consider about leaving work	231	6	35	28	21.0	1.557 ± 1.066
Take more leaves/vacations just to run off work	165	11	95	29	41.3	1.960 ± 1.121
Come late to work	216	6	63	15	26.0	1.590 ± 0.982

Note: %[a] the proportion of participants who reported the using of methods sometimes or frequently.

(1.123; 5.3%), start smoking marijuana (1.123; 5%) or take illegal drugs (1.163; 6.7%). The t-test and ANOVA analysis (Table 5) show that coping behaviours to relieve work-related stress is significantly influenced by gender (p <0.05), where male participants scored higher than female. Potential reasons behind such limited behaviours on consuming illegal substances include religion, society, and legal consequences.

Table 6 shows descriptive statistics of the extent to which surveyed work stressors contribute to the level of stress experienced by respondents. Linguistic responses were quantified as: "not at all" (1), "slight" (2), "moderate" (3), and "substantial" (4). The results indicated that the stressor "job demands" had the highest effect on participants (mean=2.547) while "work relationships" had the lowest effect (1.930). All in all, 13 stressors had a computed stress level with a mean above 2.5 (the limit between ordinary (no or slight) effect and notable (moderate or high) effect). Moreover, computed percentages of notable effects show alarming percentages of individuals who reported "moderate" or "substantial" effects. This requires management action to resolve related problems and reduce impacts on caregivers. Table 7 shows the correlations between the respondent demographics and their perceptions of stressors. The findings demonstrate that the perceived level of stress is influenced by all demographics. The results show that combinations of being a female, having low experi-

ence (1 to 5 years), working in paediatrics or obstetrics and gynaecology and being a nurse yield the highest means among their respective groups.

Table 8 presents the Pearson correlations between the total means of stressors, symptoms, and coping behaviours. The results show medium to strong positive correlations with p less than 0.05 between stressors and the frequency of symptom strength. Moreover, results show medium positive correlations between stressors and coping behaviours. This suggests that the presence of work stressors notably increases levels of stress, increases the frequency of symptoms, and influences coping behaviours. The stepwise multiple regression analysis was performed to analyse the influence of work environment, management, job demands, work relationships, and exchange with patients or accompanying person on the recurrence of symptoms, the response variable. The model correlates the overall means of stressors with the overall mean of symptoms.

Table 9 shows the results of the final model of regression with (F=41.53, p= 0.00) and R=0.60. Results indicate that an increment of one unit in stress caused by job demands alone can predict an increase in the recurrence of symptoms by 33.4%. Moreover, an increment of one unit of job demands combined with one unit of work environment, one unit of management, or one unit of work relationships stressors predict about a 50% increase in the recurrence of symptoms.

Tab. 5. Influence of respondent demographics on reported coping behaviours

BACKGROUND VARIABLE		MEAN	SD	TEST VALUE	P-VALUE
Gender	Male	1.715	0.624	**2.927 (T)**	**0.004**
	Female	1.529	0.459		
Experience	1–5	1.569	0.537	0.594 (F)	0.619
	6–10	1.634	0.503		
	11–15	1.667	0.498		
	>15	1.535	0.592		
Unit	Emergency Department (ED)	1.485	0.553	0.535 (F)	0.750
	Blood Laboratories	1.655	0.591		
	Paediatrics	1.599	0.422		
	Obstetrics and Gynaecology	1.589	0.528		
	Medical-Surgical units	1.602	0.552		
	Intensive Care Unit (ICU)	1.624	0.513		
Position	Nurse	1.604	0.538	0.692 (F)	0.558
	Technician	1.667	0.592		
	Resident Doctor	1.540	0.478		
	Specialist Doctor	1.522	0.456		

Note: items in bold are significant at the 0.05 level.

Tab. 6. Levels of stressors among healthcare givers

	Subscale/Items	Not at all	Slight	Moderate	Substantial	Mean ± SD	%ᴬ
WE	**Work Environment**					**2.275±0.735**	
WE1	Overcrowded work areas	44	106	78	72	2.593±1.009	50.00
WE2	Unclean facilities	89	107	64	40	2.183±1.007	34.67
WE3	Lack of equipment and resources	63	81	82	74	2.557±1.079	52.00
WE4	Lack of security of personal belongings	141	106	35	18	1.767±0.880	17.67
M	**Management**					**2.517±0.822**	
M1	Frequent change in management techniques	55	89	81	75	2.587±1.055	52.00
M2	Conflicting responsibilities/ multiple supervisors	56	95	73	76	2.563±1.062	49.67
M3	Too much supervision	71	87	87	55	2.420±1.043	47.33
M4	Over-harsh discipline	91	91	65	53	2.267±1.077	39.33
M5	Discrimination or prejudice from managers	41	74	100	85	2.763±1.012	61.67
M6	Lack of communication with management	69	84	77	70	2.493±1.086	49.00
M7	Failure to recognise achievements	42	83	75	100	2.777±1.060	58.33
M8	Lack of respect as an employee from managers	85	87	62	66	2.363±1.115	42.67
M9	Lack of emotional support after a serious adverse event from managers	62	89	81	68	2.517±1.058	49.67
M10	Lack of emotional support if I looked distressed during work from direct supervisor	81	75	82	62	2.417±1.096	48.00
JD	**Job Demands**					**2.547±0.755**	
JD1	Unclear job responsibilities	77	113	64	46	2.263±1.009	36.67
JD2	Conflicting work tasks	85	93	75	47	2.280±1.042	40.67
JD3	Unacceptable work tasks	79	90	60	71	2.410±1.116	43.67
JD4	Long working hours	33	77	78	112	2.897±1.031	63.33
JD5	Inflexible working hours	43	89	84	84	2.697±1.030	56.00
JD6	Not enough time to rest	40	62	94	104	2.873±1.036	66.00
JD7	Too much work	34	67	100	99	2.873±0.997	66.33
JD8	Repetitive work	36	96	82	86	2.723±1.008	56.00
JD9	Synchronous work	92	83	71	54	2.287±1.090	41.67
JD10	Working alone	105	88	58	49	2.170±1.082	35.67
JD11	Lack of physical safety	58	83	82	77	2.590±1.067	53.00
WR	**Work Relationships**					**1.930±0.807**	
WR1	Bullying, harassment or unwanted behaviour	163	87	30	20	1.687±0.904	16.67
WR2	Lack of respect from colleagues	144	92	38	26	1.817±0.962	21.33
WR3	Lack of communication between colleagues	99	111	57	33	2.080±0.978	30.00
WR4	Lack of emotional support after a serious adverse event from colleagues	103	109	61	27	2.040±0.953	29.33
WR5	Lack of emotional support if I looked distressed during work from colleagues	109	104	57	30	2.027±0.978	29.00
Ex	**Exchange with patients or an accompanying person**					**2.281±0.859**	
Ex1	My emotional sensitivity to patient's age, gender or illness	71	95	75	59	2.407±1.054	44.67
Ex2	Risk of violence, harassment or unwanted behaviour from patients or an accompanying person	109	102	48	41	2.070±1.034	29.67
Ex3	Lack of respect from patients or accompanied person	87	104	62	47	2.227±1.053	36.33
Ex4	Impatience of patients or an accompanying person	75	90	68	67	2.420±1.093	45.00

Note: %ᵃ the proportion of participants who rated the perceived level of stress moderate or substantial.

Tab. 7. Influence of demographics of participants on the level of perceived stress

BACKGROUND VARIABLE		MEAN	SD	TEST VALUE	P-VALUE
Gender	Male	2.283	0.689	-2.130 (T)	**0.034**
	Female	2.502	0.854		
Experience	1-5	2.473	0.602	**3.658 (F)**	**0.013**
	6-10	2.363	0.612		
	11-15	2.242	0.696		
	>15	2.112	0.522		
Unit	Emergency Department (ED)	2.396	0.508	**2.715 (F)**	**0.020**
	Blood Laboratories	2.106	0.566		
	Paediatrics	2.500	0.502		
	Obstetrics and Gynaecology	2.496	0.701		
	Medical-Surgical units	2.407	0.682		
	Intensive Care Unit (ICU)	2.379	0.611		
Position	Nurse	2.491	0.585	**5.031(F)**	**0.002**
	Technician	2.151	0.561		
	Resident Doctor	2.361	0.692		
	Specialist Doctor	2.226	0.659		

Note: items in bold are significant at the 0.05 level.

Tab. 8. Bivariate correlation coefficients between the total mean of stressors, symptoms and coping behaviours

VARIABLES	WE	M	JD	WR	Ex	SYMPTOMS	COPING BEHAVIOURS
WE	1	0.338	0.436	0.363	0.439	0.392	0.226
M		1	0.752	0.362	.369	0.490	0.289
JD			1	0.387	0.466	0.556	0.269
WR				1	0.512	0.361	0.352
Ex					1	0.378	0.369
Symptoms						1	0.340
Coping behaviours							1

Note: items in bold are significant at the 0.05 level. WE: Work Environment stressors; M: Management stressors; JD: Job Demands stressors; WR: Work Relationships stressors; Ex: Exchange with Patients or accompanying person stressors.

Tab. 9. Predictors accepted to be in the final model of the stepwise multiple regression regarding the influence of stressors on the recurrence of symptoms

PREDICTORS	R	R^2	ADJUSTED R^2	REGRESSION COEFFICIENTS (B)	P-VALUE
JD	0.556	0.309	0.307	0.334	0.000
WE	0.580	0.337	0.332	0.153	0.004
WR	0.593	0.352	0.345	0.125	0.018
M	0.600	0.360	0.352	0.142	0.047

JD: Job Demands stressors; WE: Work Environment stressors; WR: Work Relationships stressors; M: Management stressors.

4. DISCUSSION OF THE RESULTS

Unlike previous related studies, this study combined the results for various healthcare professions, work units, genders, and experience levels. Moreover, the study surveyed symptoms, coping behaviours, and workplace stressors.

While it is difficult to address generic resolutions to each stressor individually, healthcare organisations can consult specialists and literature for best practices and customise solutions based on their specific conditions, capabilities, and resources. E.g., local government or legal personnel may help structure regulations to govern aggressive interactions among healthcare givers and between caregivers and patients or their companions. Moreover, the findings may serve the Jordanian care providers in prioritising their efforts to improve the mental well-being of their staff. E.g., more focus should be given to resolving stress causes related to job demands, especially those that include combinations of long working hours, not enough time to rest, and too much work. A key to resolving such issues can be achieved through the hiring of sufficient numbers of staff based on foreseen demands of the individual units. In addition, job rotation, when feasible, may largely ease stress due to inflexible working hours and repetitive work.

Study results illustrate significant correlations between the perceived level of stress due to stressors and the anticipated outcomes; symptoms and coping behaviours. A notable percentage of Jordanian healthcare workers suffer repeated symptoms that indicate stress suffered in the work environment. To cope with their stress, some caregivers resort to unhealthy behaviours rather than consulting a specialist or practising healthy behaviours to relieve their stress. In addition to self-harm, foreseen consequences include high turnover among the medical staff and inferior performance of caregivers in terms of dedication and quality. To ease symptoms and to better control coping behaviours, HR managers can consult the literature and local psychiatrists for best practices in stress diagnosis and relief. From the literature, such relief efforts may include guidance, support groups, regular group and one-on-one meetings with psychiatrists, and leisure activities. The choice of coping mechanisms in addition to other work regulation must consider the gender influence because, in general, female caregivers show higher levels of stress recurrence and less tendency to use unlawful coping methods.

The obtained results are consistent with those presented in individual studies conducted worldwide. Next, some sample findings are offered from the surveyed literature that investigates adverse consequences of workplace stress, coping strategies, and the influencing stressors in healthcare. Boran et al. (2012) elaborated that frequent symptoms were headaches, irritability, and consuming more energy (e.g., caffeinated) drinks. Al-Zubair et al. (2015), Boran et al. (2012), and Lin et al. (2007) showed that stress could lead to illnesses, such as musculoskeletal fatigue, nervousness, headaches, and irritability. Suresh et al. (2013) discussed the relationships between high levels of stress and job dissatisfaction. Arimura et al. (2010) examined the relationship between work stress and the occurrence of medical errors. Williams et al. (2007) discussed turnover intention and absenteeism. Chen et al. (2014) and Williams et al. (2007) addressed reduced performance and low quality of care. Finchilescu et al. (2018) stated that higher levels of bullying were associated negatively with job satisfaction and positively with the propensity to leave. Moreover, researchers reported several stress-coping strategies used by caregivers. Gholamzadeh et al. (2011) indicated that the most common coping strategies used by nurses were self-control and positive reappraisal. Gleeson et al. (2019) demonstrated relationships between stress and the consumption of alcohol and antidepressants/anxiolytics. Boyacı et al. (2014) stated that the most reported coping strategies were "I endure in silence and burn myself out" and "I try to solve it on my own". Callaghan et al. (2000) showed that seeking support from friends and colleagues, using different cognitive strategies, and leisure activities were the most used coping strategies to deal with stress. Hamaideh et al. (2008) stated that guidance was the most frequent type of help provided to stressed nurses. Hasan and Tumah (2019) discussed that the most frequent coping strategies were reminding oneself that the work will be appreciated and discussing problems with colleagues. Furthermore, various researchers investigated workplace stressors in the healthcare environment. Setti and Argentero (2011) deliberated that long working hours, the lack of control over work, poor social support, technological advances, and the shortage of staff were responsible for the high levels of stress experienced by healthcare workers. Finchilescu et al. (2018) indicated that bullying had a significant impact on the mental well-being of nurses in Zimbabwe. Halpin et al. (2017) showed that workload, inadequate staffing, and managing multiple role

demands were the most reported stressors among newly qualified nurses in the UK. Gholamzadeh et al. (2011) showed that the major sources of stress among emergency department nurses in Shiraz were problems related to the physical environment, workload, dealing with angry patients or their relatives, being exposed to health and safety hazards, and the lack of support by nursing administrators. Based on Boyacı et al. (2014), results showed that inequitable distribution of tasks, work ignored by others, widespread gossip in the workplace, fear of patient dissatisfaction and complaints, relations with management, and injustice in performance evaluation were the leading stress causes among caregivers in Turkey. Callaghan et al. (2000) reported that nursing issues, such as too much work, dealing with emergencies, and job responsibilities were key factors to experiencing stress among nurses in Hong Kong. For the case of Jordan, Hamaideh et al. (2008) showed that death/dying and workload were the most frequent stressors among Jordanian nurses. In the paper by Hamaideh and Ammouri (2014), the authors showed that inadequate preparation, uncertainty concerning treatment, conflicts with physicians, conflicts with other nurses, and the lack of support were the most reported causes of stress among Jordanian nurses. Hasan and Tumah (2019) reported that dealing with physical and verbal abuse from patients was highly stressful. Boran et al. (2012) showed that high levels of stress were significantly correlated with long working hours, being a woman, and the position (job title). In addition to superiority issues associated with the job title within healthcare teams, researchers showed that a care unit was a possible cause of stress. Callaghan et al. (2000) stated that paediatric nurses reported the highest levels of stress. Masa'deh et al. (2018) showed that inpatient psychiatric nurses had the highest level of stress and that they faced aggressive behaviour from patients. Based on findings by Boran et al. (2012), general practitioners recorded the highest degree of stress.

Conclusions

In light of the present findings, a structured system is necessary within Jordanian healthcare organisations to detect and resolve causes of stress and to guide coping behaviours. It is of utmost importance that human resource managers in Jordanian healthcare organisations focus on improving various elements of the work environment. The obtained results can help decision-makers optimise and prioritise their resources to eliminate or significantly reduce stressors. Moreover, a structured plan is needed to broaden awareness among caregivers about the importance of professional diagnoses of stress and the use of lawful methods to relieve stress.

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