RESEARCH ARTICLE

Factors related to work-related stress among pharmacists in the south of Jordan

Nedal Awad Alnawaiseh[1], Waqar Al-Kubaisy[2], Omar Waseem A-lkubaisi[3], Nashat Abdel Rahim Alnawayseh[4], Sadeen Zein Eddin[5], Rashed Alqaisi[6]

Abstract

Objective: To identify the prevalence of and risk factors associated with work-related stress among pharmacists.

Method: The cross-sectional study was conducted from January 3 to July 1, 2022, in the Alkarak Governorate of Jordan after approval from the ethics review committee of Mutah University, Jordan. The sample comprised qualified pharmacists with at least one year of professional experience. Data was collected using a validated and reliable self-administered questionnaire containing 20 items under five main domains. Each item was scored on a 5-point Likert scale. Data was analysed using SPSS 25.

Results: Of the 179 pharmacists with mean age 32.5±7.7 years and mean professional experience 7.7±6.3 years, 122(68.2%) were females and 57(31.8%) were males. Of the total, 145(81%) pharmacists demonstrated moderate work-related stress, while 4(2.2%) showed a high level. Gender, working hours per week, number of prescriptions dispensed per day, number of pharmacists per shift, employment status, and years of professional experience were significantly associated with the level of work-related stress ($p<0.05$).

Conclusion: Several factors were found to have a significant relationship with work-related stress among pharmacists.

Key Words: Work-related Stress, Pharmacists, Risk factor, Gender, Years of experience.

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Introduction

The fast pace and demands of modern life lead to stress in daily life.[1] Stress is a psychological and physical condition that manifests when a person is unable to cope successfully with demands and difficulties.[2]

The National Institutes of Health in 2007 stated that stress is a natural physiological mechanism that protects the human body from some dangerous states. A quick bodily response will occur when facing stress, through releasing hormones, to increase alertness and focus.[3] However, continuous exposure to stress hormones will lead to several serious psychological and physical illnesses. Therefore, there are two types of stress: positive (eustress) and negative (distress). By eustress, work performance will be stimulated and improved, keeping the employees motivated to work harder. On the other hand, distress can have negative outcomes by affecting workers' health and productivity, and directly impacting an organisation's performance. Employees who suffer from workplace stress tend to show decreased job satisfaction and higher absenteeism, leading to increased intentions to leave the organisation.[4] interestingly, work stress is responsible for 60-80% of all workplace accidents. [5]

Work-related stress (WRS) is a prevalent issue that occurs across all professions. It is both a psychological and physical state that can greatly and negatively influence both the individual and the organisation.[2] In recent years, the rates of WRS and its associated anxiety and depression have been increasing.[6] WRS among healthcare professionals is even more worrying. Several studies have shown that the majority of health professionals, including pharmacists, are significantly exposed to WRS due to their working conditions, work environment, workload and night shifts.[7,8] Alongside patient accountability, resource availability, skills deficiency, inequivalent income, and other organisational concerns, there is no denying that the extent of work output required of pharmacists and their role in the community have been changing and increasing,[9] which are all factors that could be contributing to the problem of WRS. Regardless of the specific cause, workplace stress in the healthcare sector should in no way be disregarded. Stressful work life not only affects the pharmacists' health, but also reduces their ability to serve. This in turn affects the quality of services provided, resulting in loss of the trust of the patients and leading to decrease in

[1,2] Department of Community Medicine, Mutah University, Alkarak, Jordan.[3] Alforat General Hospital, Baghdad, Iraq. [4]Master Public Health Management, Technical and Medical Assistant, Director of Health Affairs in Alkarak Governorate, Ministry of Health, Jordan. [5]Department of Medicine, Mutah University, Jordan.[6]Ministry of Health, Irbid, Jordan.

Correspondence: Nedal Awad Alnawaiseh. . **Email:** nawayseh@gmail.com

ORCID ID: 0000-0003-0361-7586

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professional achievement.[10, 11]

Pharmacists are fundamental to the healthcare system. Nowadays, their job scope has become wider to include many tasks alongside dispensing medication.[12] Thus, pharmacists experience significant stress in their job, which could lead to job burnout.[13] Other factors leading to WRS among pharmacists could be organisational factors, interpersonal characteristics, and work-home conflicts.[14] Several studies have shown that the levels of job stress vary according to gender and place of work, with community pharmacists having higher levels of stress than hospital pharmacists and those associated with primary healthcare.[15] Thus, several studies have demonstrated a great interest in the assessment of job stress among pharmacists at their workplaces, or in their specific environments, like private or public pharmacy, hospital environment, etc.[5, 15]

In recent years, the pharmacy profession in Jordan has been increasingly recognised as an important and necessary partner in the field of multidisciplinary healthcare.[11] Pharmacists practise their roles in different settings. Today, pharmacists are more involved in and responsible for achieving positive health outcomes and ensuring that the patient obtains positive results when seeking treatment. Consequently, stress in the workplace has been higher. According to a study conducted in the Jordanian capital of Amman, WRS and its many factors give rise to reduced satisfaction amongst pharmacists and lower quality and safety in pharmaceutical care.[15]

To our knowledge, no study has been conducted in southern parts of Jordan on WRS among pharmacists. The current study was planned to fill the gap in literature by evaluating the prevalence of occupational stress among pharmacists, and to identify factors that may contribute to WRS.

Subjects and Methods

The cross-sectional study was conducted from January 3 to July 1, 2022, in the Alkarak Governorate of Jordan after approval from the ethics review committee of Mutah University, Jordan. According to the Jordan Pharmacists Association, there were 207 pharmacists were working in the Alkarak governorate in 2021; 31 at the five hospitals, 18 at the seven Comprehensive Healthcare Centres (CHCs); 18 at the 32 primary healthcare centres (PHCs), and 140 in the 76 community pharmacies. The current sample comprised qualified pharmacists with at least one year of professional experience regardless of their workplace setting. Pharmacists not directly involved in dispensing medication, like those working in laboratories were excluded, and so were those on extended sick leave or unpaid leave, and those temporarily substituting for absent colleagues. The sample size was calculated using OpenEpi based on a 62% WRS prevalence with 95% confidence level.[16] However, it was decided to include all the pharmacists working in the Alkarak Governorate who met the criteria.

After taking informed consent from the participants, data was collected using well-constructed, self-administered, validated and reliable questionnaire that was handed over personally to all the participants. The questionnaire, adapted from a study in Amman city, Jordan,[15] was composed of two parts. Part A consisted of 13 questions covering the sociodemographic as well as professional data, while part B had 20 items related to WRS, and had five main domains; patient care responsibility, job conflicts, professional recognition, managing workload, and professional uncertainty. Each item was scored on a five-point Likert scale, with 1 = never, 2 = rarely, 3 = sometimes, 4 = most of the time, 5 = all the time. Depending upon the overall mean score, the level of WRS was categorised into three levels; low = 1-2.33, moderate - 2.34-3.66, and high = 3.67-5. The three categories were computed by subtracting the least agreement level from the) the highest agreement level, and dividing the outcome by the number of levels: (5-1)/3=1.33 (Sekaran & Bougie, 2019).[17]

The patient care responsibility domain had four items; inadequate patient information, job difficulties with personal life, fear of making a mistake with a patient's treatment, and uncertain about talking about the patient's condition and/or treatment. The job conflicts domain consisted of four items; determining the way of work by health professionals, supervising the performance of co-workers, disagreeing with other health professionals, and conflicts with co-workers/management. The domain of professional recognition had six items; feeling stress due to being unrecognised or unaccepted by health professionals, receiving no respect or recognition from the general public, a lack of job advancement, unknown job performance expectations, not being paid enough, and not receiving feedback about job performance. The workload management domain had three items; work interruption, difficulties in performing everything perfectly, and not having enough staff to provide the necessary services. The domain of professional uncertainty had three items; changes in the place of work, new roles along with existing responsibilities, and not being involved in making job decisions.

Official permission was obtained from the Alkarak health director, as well as from the heads of the health centres

and hospitals.

Data was analysed using SPSS 25. Sociodemographic data was presented as frequencies and percentages, while t-tests and one-way analysis of variance (ANOVA) were used to compare continuous variables that were normally distributed, and the chi-square test was used to determine the relations of WRS with various factors P<0.05 was considered significant. The strength of association was evaluated by calculating the odds ratio (OR) with their 95% confidence interval (95% CI).

Results

Of the 200 questionnaires distributed, 188(94%) were returned. Of them, 9(4.8%) responses were excluded for being incomplete, and 179(95.2%) were analysed. There were 122(68.2%) females and 57(31.8%) males with overall mean age 32.5±7.7 years (range: 24-52 years), mean professional experience 7.7±6.3 years (range: 1-30 years), and mean working hours/week 43.7±8.6 hours (range: 12-90 hours). Of the total, 97(54.2%) participants were married, 81(45.3%) worked only during the morning shift, 48(26.8%) during the night shift, and 50(27.9%) worked both the shifts. Further, 119(66.5%) subjects were associated with community pharmacies; 112(94.1%) as employees, 7(5.9%) as managers/owners, 84(70.6%) at a single type of community pharmacy, and 35(29.4%) at a

Table-1: Work-related stress (WRS) levels among the pharmacists.

Domain	Item	Mean ± SD
Patient care responsibility		
	Inadequate patient information	2.52 ± 1.2
	Uncertain about talking about the patient's condition and/or treatment	2.89 ± 1.2
	Job difficulties with personal life	3.2 ± 0.93
	Fear of making a mistake with the patient's treatment	2.6 ± 0.94
	Total mean	2.9 ± 0.72
Job conflict		
	Determining the way of work by health professionals	2.6 ± 1.1
	Supervising the performance of coworkers	2.8 ± 1.27
	Disagreeing with other health professionals	2.8 ± 1.1
	Conflicts with coworkers/management	2.7 ± 0.99
	Total mean	2.7 ± 0.75
Professional recognition		
	Unrecognized or unaccepted by a health professional	2.5 ± 0.99
	No respect or recognition from the general public	2.7 ± 1.3
	No job advancement	3.3 ± 1.3
	Unknown job performance expectations	2.6 ± 1.04
	Not paid enough	2.9 ± 1.2
	No feedback on job performance	2.9 ± 1.03
	Total mean	2.83 ± 0.68
Managing workload		
	Work interruption	2.7 ± 1.2
	Difficulty performing everything perfectly	2.8 ± 1.2
	Not enough staff to provide necessary services	2.7 ± 1.13
	Total mean	2.74 ± 0.79
Professional uncertainty		
	Changes in the place of work	2.7 ± 1.19
	New roles along with the existing responsibilities	2.8 ± 1.1
	Not being involved in making job decisions	2.6 ± 1.1
	Total mean	2.7 ± 0.88
Overall mean		2.77 ± 0.58

SD: Standard deviation.

Table-2: Work-related stress (WRS) with respect to sociodemographic and job characteristics.

Characteristic	No. (%)	Mean ± SD	Test of sig.	p value
Male	57 (31.8)	3.01 ± 0.38	t = 2.46	0.015
Female	122 (68.2)	2.65 ± 0.61		
Age (years) <30	76 (42.5)	2.68 ± 0.59		
(30-39)	66 (36.9)	2.8 ± 0.59	F = 1.25	0.29
(40-49)	30 (16.8)	2.9 ± 0.44	r = 0.17	0.02
≥50	7 (3.9)	2.81 ± 0.56		
Marital status Married	97 (54.2)	2.81 ± 0.55	t = 0.98	0.33
Unmarried	82 (45.8)	2.71 ± 0.61		
Family size (persons) ≤3	48 (26.8)	2.69 ± 0.61		
4-7	107 (59.8)	2.8 ± 0.56	F = 0.65	0.53
≥8	24 (13.4)	2.75 ± 0.58		
Community pharmacy	119 (66.5)	2.79 ± 0.55		
Government hospital	27 (15.1)	2.84 ± 0.63	F = 1.34	0.25
Private hospital	14 (7.8)	2.68 ± 0.62		
CHC	13 (7.3)	2.43 ± 0.72		
PHC	6 (3.4)	2.8 ± 0.28		
Community pharmacy (119)	84 (70.6)	2.8 ± 0.38		
Single	35 (29.4)	2.76 ± 0.65	t = 0.38	0.71
Chain				
Category of job (119) Employee				
Manger	112 (94.1)	2.8 ± 0.53	t = 2.62	0.01
	7 (5.9)	2.28 ± 0.61		
Working hours/week	4 (2.2)	2.26 ± 0. 9		
≤30	161 (89.9)	2.78 ± 0.54	F = 2.45	0.09
31-60	4 (2.2)	2.79 ± 1.1	r = −0.04	0.6
≥61	14 (7.8)			
Years of experience ≤5	77 (43)	2.64 ± 0.6		
6-10	57 (31.8)	2.86 ± 0.61		
11-15	24 (13.4)	2.99 ± 0.23	F = 2.36	0.055
16-20	16 (8.9)	2.71 ± 0.61	r = 0.16	0.35
≥21	5 (2.8)	2.67 ± 0.51		
No. of pharmacists working simultaneously		0	F = 1.64	0.197
			r = −0.012	0.87
1-3	42 (23.5)	2.69 ± 0.45		
4-6	124 (69.3)	2.77 ± 0.57		
	13 (7.5)	3.04 ± 0.94		
Prescriptions/day ≤50	153 (85.5)	2.73 ± 0.54		
51-100	20 (11.2)	2.91 ± 0.63	F = 2.69	0.07
≥101	6 (3.4)	3.21 ± 0.99	r = 0.16	0.35
Work shift Morning	81 (45.3)	2.68 ± 0.51		
Night	48 (26.6)	2.79 ± 0.63	F = 1.74	0.18
Both	50 (27.9)	2.87 ± 0.62		

SD: Standard deviation, CHC: Comprehensive healthcare centre, PHC: Primary healthcare centre.

Table-3: Risk of work-related stress (WRS) in relation to sociodemographic and job characteristics.

Pharmacist characteristic	WRS N (%)				
	Moderate	Low	χ2	p value	OR (95% CI)
Gender Male	3 (5.3)	54 (94.7)	7.9	0.005	5.12(1.48-17.65)
Female (reference group)	27 (22.1)	95 (77.9)			
Age years <30	16 (21.1)	60 (78.9)		0.358	
30-39	11 (16.7)	55 (83.3)	3.23		
40-49	2 (6.7)	28 (93.3)			
≥50	1 (14.3)	6 (85.7)			
Age <30(reference group)	16 (21.1)	60 (76.3)			
≥30	14 (13.9)	89 (84.5)	1.745	0.186	0.59 (0.79-1.05)
Marital status Married	11 (11.3)	86 (88.7)	4.458	0.347	2.36 (1.0-1.33)
Unmarried (reference group)	19 (23.2)	63 (76.8)			
Family size (persons) ≥ 3	7 (14.6)	41 (83.3)	2.015	0.365	
4-7	86 (78.5)	21 (19.6)			
22 (87.5)	2 (8.3)	≤ 8			
Pharmacy practice setting					
Community pharmacy	18 (15.1)	101(84.9)			
Government hospital	4 (14.1)	23 (82.5)			
Private hospital	4 (28.6)	10 (71.4)			
CHC	4 (30.8)	9 (69.2)			
PHC	0	6 (100)			
Pharmacy practice setting			1.95	0.58	
Community pharmacy	18 (15.1)	101(84.9)			
Government hospital	4 (14.8)	23 (85.2)			
Private hospital	4 (28.2)	10 (71.4)			
CHCs	4 (21.1	15 (78.9)			
Pharmacy practice setting			0.68	0.418	1.43 (0.63-3.14)
Community pharmacy	18 (15.1)	101(84.9)			
All others (reference group)	12 (84.9)	148(15.1)			
Community pharmacy 119			0.92	0.34	
Single	11 (13.1)	73 (86.9)			
Chain	7 (20)	28 (80)			
Community pharmacist's category					
Employee	14 (12.5)	98 (87.5)	9.46	0.0021	8.76 (1.77-43.36)
Manager (reference group)	4 (57.1)	3 (42.9)	9.46	0.0021	8.76 (1.77-43.36)
Working hours/week≤30	3 (75)	1 (25)			
31-60	21 (13.)	140(86.9)	5,18	0.075	
Working hours/week≤60	24	141 (85)			
>60 (reference group)	6	8 (57.1)	7.41	0,0065	4.41 (1.40-13.83)
Years of experience ≤10 (reference group)	27 (20.1)	107(79.9)	4.39	0.036	3.53 (1.0-12.2)
>10	3 (6.7)	42 (93.3)			
No. of pharmacists worked with 0	4 (9.5)	38 (90.5)	5.97	0.50	
1-3	21 (16.9)	(83.1)103			
4-6	5 (38.5)	(61.5) 8			
≤3	25 (15.1)	141(84.9)	4.732	0.029	3.53 (1.1-11.65)
>3 (reference group)	5 (38.5)	8 (61.5)			
Prescriptions/day ≤50	25 (16.4)	(83.6)128	0.29	0.925	
51-100	4 (20)	(80) 16			
≥101	1 (16.7)	(83.3) 5			
Prescriptions/day <100	26 (15.4)	143(84.6)			
≥100 (reference group)	4 (40)	6 (60)	4.100	0.428	3.67 (0.97-13.9)
Work shift Morning	14 (17.3)	67 (82.7)			
Night	8 (16.7)	40 (83.3)	0.04	0.98	
Both	8 (16)	42 (84)			

CHC: Comprehensive healthcare centre, PHC: Primary healthcare centre, OR: Odds ratio, χ^2: Chi-square, CI: Confidence interval

chain pharmacy.

The majority 145(81%) of the pharmacists demonstrated a moderate level of WRS, 4(2.2%) had a high level, and 30(16.8%) reported a low level. The overall mean WRS score was 2.77±0.6, indicating a moderate WRS level. Domain and item scores were noted in detail (Table 1).

Gender, age, and employment status had a significant impact on WRS level (Table 2).

The 4(2.2%) pharmacists with a high WRS level were merged with the 145(81%) who demonstrated a moderate level of WRS, leading to two WRS groups: 30(16.8%) with low (≤2.33) WRS and 149(83.2%) with moderate (>2.33) level. A direct comparison showed that gender, working hours per week, number of prescriptions dispensed per day, number of pharmacists per shift, employment status, and years of professional experience were significantly associated with WRS level (Table 3).

Discussion

The current study is the first such study conducted in the southern parts of Jordan, and had a decent sample size with a response rate of 94%, which was much higher than reported by studies in Amman (57%), and Cyprus (71.8%).[15, 18]

The study found that at least 81% of the pharmacists showed moderate WRS, which was much higher than what was reported in Vietnam (52.8%)19 and the United States of America (70%).[11] This variation in can most probably be attributed to the different study populations, different measurement tools used, and health policy system variations. In addition, one should not forget the impact of the coronavirus disease-2019 (COVID-19) pandemic during which the current study was carried out.

Interestingly, regarding descriptions of the WRS domains, several studies have stated that workload is a possible cause of WRS among pharmacists.[15, 19] This hypothesis is reasonable, but the current results did not support it. The total mean score of the workload domain was low (2.74±0.79) compared to the scores of other domains. Moreover, pharmacists who worked ≤60 hours/week were more than four times (odds ratio [OR] 4.49; 95%CI:1.40-13.83) prone to have moderate WRS. Those working >60 hours/week showed significantly lower rates of

moderate stress compared to those who worked less.

In terms of professional recognition, three items (lack of job advancement, lack of feedback on job performance, and inadequate pay) caused higher stress to the current pharmacists. This finding is in concordance with earlier evidence related to hospital nurses. A study in China stated that underpayment was an important reason and greatly responsible for pharmacists' WRS. [20] A study done on healthcare workers detected that higher salaries were strongly associated with increased job satisfaction, enhanced patient care, and reduced turnover.[21] Therefore, it is important to implement strategies to reduce WRS through recognition of pharmacists' job performance, provision of feedback, and adequate financial compensation.

Work-life balance is a building block for success in any career. In the current study, it received the highest total mean score (2.9). This finding supported several previous studies.[19, 22] Therefore, organisational measures should be taken regularly to control this imbalance. Such measures include stress management, time management, and leisure arrangements.

The majority (94.7%) of male pharmacists in the current study exhibited significantly higher moderate WRS levels than females (p=0.005), and they were at significantly higher risk of WRS (OR 5.1; 95%CI: 1.5-16.75) than females. These findings contradict several previous studies, most of which revealed that women showed higher levels of stress than men.[17, 23] This variation may be related to cultural differences.[24] A French study also reported that men were significantly more affected by WRS than women.[25] Similarly, a British study reported that women showed a higher job satisfaction level.[26]

Contradicting several studies[17, 26] reported an indirect correlation of WRS with the age of pharmacists, the current study found a significant direct correlation relationship of age with WRS (p=0.02). This was confirmed by the significant relationship noted between years of experience and moderate WRS. Those with >10 years of experience were significantly more prone to moderate WRS (OR 3.5; 95%CI: 1-12.2). The best explanation for this was provided by Mott et al. who reported that pharmacists who had children with old age had higher (15.3%) WRS than their colleagues who did not have children (14.6%).[11] A qualitative study involving 30 female community pharmacists in the United Kingdom found that those who had children reported higher WRS, apparently because of their many responsibilities.[26] In addition, old age may be associated with some chronic diseases.

There are controversial opinions regarding pharmacy practice setting and WRS. A study in Taiwan stated that community pharmacists were more satisfied and less stressed with their job than hospital pharmacists.[27] However, in a Northern Ireland study, the total WRS stress was significantly greater (p<0.05) among community pharmacists compared to hospital pharmacists.[15] Similarly, a study in Cyprus found that hospital pharmacists and those who worked in health centres under the management of the Ministry of Health had lower perceived stress.[1] In the current study, no significant association was detected between the different pharmacy practice settings and WRS. However, the highest rate of moderate WRS was found among community pharmacists, which is supported by previous studies. [15,17,28] This finding may be attributed to the different nature of jobs and pharmacies in which pharmacists are less likely to utilise their clinical and professional skills and more likely to be pressured into a business-like and retail type of work.

The stress felt by community pharmacists can be explained by inadequate information available about the patient condition, which leaves pharmacists feeling uncertain about what to say or how to counsel the patients.[29, 30] Failure to provide proper counselling can result in ineffective medications that may adversely affect patients' health and safety.[30] The current study showed that among community pharmacists, WRS was significantly higher among employees compared to pharmacy managers/owners. This finding supports a study conducted in North Carolina, which revealed that high-grade pharmacists or consultants were more comfortable than pharmacists in lower positions.[31]

In the current study, pharmacists who used to dispense <100 prescriptions/day demonstrated a significantly higher rate of moderate WRS compared to the rest (84% vs. 60%). This finding was in line with literature.[16] When pharmacists deal with large numbers of patients, it gives them a good opportunity to carry out clinical duties related to medicine dispensing, like monitoring, checking, or even counselling. Therefore, most of their work time is spent tending to patients' health activities, which increases their job satisfaction and decreases stress.[27]

In the current study, the moderate WRS rate significantly decreased with an increased number of pharmacists working simultaneously. Pharmacists working with <3 colleagues were 3.5 times more significantly at risk of moderate WRS. The best explanation for this relationship is that sharing work with a lower number of pharmacists means the workload increases, resulting in WRS. Also, when the pharmacists require sick or casual leave, they

face difficulties because of the challenge of finding a replacement. The relationship of working shifts and the number of pharmacists working simultaneously with WRS among pharmacists was not significant in the current study.

The limitation of the current study is that it was conducted during the COVID-19 quarantine period, which was marked by heightened stress levels due to pandemic-related challenges. This external stress may have influenced the reported prevalence and perception of WRS, potentially limiting the generalisability of the findings to non-pandemic settings.

Conclusion

Pharmacists in the southern parts of Jordan were found to have a moderate level of WRS, and it had a significant association with gender, working hours per week, number of prescriptions dispensed per day, number of pharmacists per shift, employment status, and years of professional experience.

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AUTHOR'S CONTRIBUTION:
NAA: Concept, design, data acquisition, analysis, interpretation, drafting, revision, final approval and agreement to be accountable for all aspects of the work.
WAK & OWAK: Drafting, revision and final approval.
NARA: Final approval and agreement to be accountable for all aspects of the work.
SZE: Concept, design, data acquisition, analysis, interpretation, drafting and revision.
RA: Drafting, revision and agreement to be accountable for all aspects of the work