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Research Article

Evaluating Stress Level and Its Effect on the Quality of Life among Pharmacists Working in Baghdad Teaching Hospitals

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Abstract

Background: The evolving role of pharmacists has shifted from mere medication dispensing to comprehensive patient care, increasing work demands and stress levels among pharmacy professionals. Meanwhile, stress can deteriorate pharmacists' quality of life (QOL) and affect the quality of services they provide. ***Objective***: To assess the level and determinants of stress and its consequences among pharmacists in Baghdad's hospitals. ***Methods***: A cross-sectional, questionnaire-based design was employed, targeting 150 pharmacists across nine teaching hospitals in Baghdad, Iraq. Participants' stress levels and QOL were assessed using already validated questionnaires, the Perceived Stress Scale and the WHOQOL-BREF, respectively. ***Results***: Approximately 80% of participating pharmacists reported experiencing moderate levels of stress, with overtime work identified as a significant contributing factor. Despite the stress, over half of the participants expressed satisfaction with their overall health and QOL. Notably, stress levels showed an inverse correlation with QOL indicators, including physical health, psychological health, social relationships, and environmental factors. ***Conclusions***: Iraqi pharmacists who work in Baghdad hospitals suffer from a moderate level of stress. Working for extra hours can exacerbate stress. Pharmacists' job stress can negatively reduce their QOL.

Keywords: Baghdad, Iraq, Quality of life, Pharmacists, Stress.

تقييم مستوى التوتر وأثره على نوعية الحياة لدى الصيادلة العاملين في مستشفيات بغداد التعليمية

الخلاصة

الخلفية: تحول الدور المتطور للصيادلة من مجرد صرف الأدوية إلى الرعاية الشاملة للمرضى، مما أدى إلى زيادة متطلبات العمل ومستويات التوتر بين المتخصصين في الصيدلة. وفي الوقت نفسه ، يمكن أن يؤدي الإجهاد إلى تدهور نوعية حياة الصيادلة (QOL) ويؤثر على جودة الخدمات التي يقدمونها. **الهدف**: تقييم مستوى ومحددات التوتر وعواقبه لدى الصيادلة في مستشفيات بغداد. **الطرائق**: تم استخدام تصميم مقطعي قائم على الاستبيان ، مستهدف 150 صيدليا في تسعة مستشفيات تعليمية في بغداد، العراق. تم تقييم مستويات الإجهاد وجودة الجودة لدى المشاركين باستخدام استبيانات تم التحقق من صحتها بالفعل، ومقياس الإجهاد المدرك و WHOQOL-BREF ، على التوالي. **النتائج**: أفاد ما يقرب من 80٪ من الصيادلة المشاركين بأنهم يعانون من مستوى معتدل من التوتر ، مع تحديد العمل الإضافي كعامل مساهم مهم. على الرغم من التوتر، أعرب أكثر من نصف المشاركين عن رضاهم عن صحتهم العامة وجودة الحياة. والجدير بالذكر أن مستويات التوتر أظهرت ارتباطا عكسيا بمؤشرات جودة الحياة، بما في ذلك الصحة البدنية والصحة النفسية والعلاقات الاجتماعية والعوامل البيئية. **الاستنتاجات**: الصيادلة العراقيون الذين يعملون في مستشفيات بغداد يعانون من مستوى معتدل من التوتر. يمكن أن يؤدي العمل لساعات إضافية إلى تفاقم التوتر. يمكن أن يقلل الإجهاد الوظيفي للصيادلة سلبا من جودة جودة حياتهم.

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INTRODUCTION

The pharmacist is a vital member of the healthcare team with specialized knowledge in medicine. As a result, the role of the pharmacist has evolved from merely dispensing medications to providing more advanced services. These services include reviewing the appropriateness of prescribed medications, providing healthcare services through counseling, and educating patients about their treatment to enhance efficacy, safety, and adherence to medications [1-3]. Changes in work expectations and demands of pharmacists juxtaposed with various challenges in practice (e.g., time pressures, constant need for accuracy) have the potential to increase pharmacy staff work stress [3,4]. Being involved with medication errors that reach the patient and those that are intercepted by pharmacy staff before dispensing (i.e., near miss) (5) can create additional stress in the work environment and has been found to be among the most significant stresses faced by pharmacy staff [6]. Meanwhile, the impact of stress among pharmacists should not be underestimated. Studies have demonstrated that chronic stress can adversely affect the cognitive and emotional function of health professionals, resulting in medical errors

and a high turnover rate [7,8]. In addition, stress can deteriorate pharmacists' quality of life (QOL) and affect the quality of services they provide. It also leads to the destruction of the health environment, makes them more vulnerable to disease, increases the risks of depression, anxiety, and social distress, and disturbs the pharmacists' social relationships [9]. To the best of our knowledge, no previous studies were conducted to assess the level of stress among Iraqi pharmacists. Therefore, the current study aimed to assess the level of stress, factors affecting it, and its consequences among pharmacists working in teaching hospitals in Baghdad, Iraq.

METHODS

Study design

A cross-sectional, questionnaire-based study was conducted in the largest hospitals (Baghdad Teaching Hospital, Al-Mansour Pediatric Hospital, Nursing Home, Al-Madain, Al-Karkh, Al-Yarmok Teaching Hospital, Al-Wasti, Central Pediatric Hospital, Gazi Al-Harari) in Baghdad, Iraq, from December 2023 to February 2024. To ensure the generalizability of the results, pharmacists of both genders with at least one year of working experience from nine teaching hospitals located in various areas of Baghdad (Karkh and Rusafa) were included in this study. A convenient and purposive sampling method was employed to obtain a representative sample by selecting pharmacists from different pharmaceutical fields (internal pharmacy, clinical pharmacy, outpatient pharmacy, drug store, emergency pharmacy, and sentinel pharmacy) within the hospital setting. Pharmacists with psychiatric disorders were excluded. All participants were informed about the study objective, and only those who provided their verbal informed consent were enrolled in this study. The target sample size for this study was set at 150 [10]. The study was ethically approved by the ethical committee at the College of Pharmacy/University of Baghdad.

Data collection and analysis

All enrolled participants were asked to fill in a paper-based questionnaire. The given questionnaire consisted of three main parts; the first part involved questions about the pharmacist demographics (age, gender, working experience, marital status, working place, engagement in additional employment, comorbid conditions); the second part was an already validated questionnaire, the Perceived Stress Scale, that aimed to assess the responder's level of stress [11]; the last part was the WHOQOL BREF, an already validated questionnaire that aimed to measure the responder's overall health, QOL, and four additional domains (physical health, psychological health, social relationships, and environment) [12]. Moreover, both validated questionnaires utilized in the study were represented by several questions with a five-point Likert response scale. The scoring of these questionnaires was based on previous literature [11,12].

Statistical analysis

Data input and analysis was done using SPSS version 16. Categorical variables were reported as numbers and percentages. Continuous variables were reported as mean ± standard deviation. The chi-square test was used to assess the significance of the difference among categorical variables. A Pearson correlation test was used to measure the correlation between continuous variables. *p*-values less than 0.05 were considered significant.

RESULTS

In Table 1, the average age of participating pharmacists was 31.00±6.98 years. Most (58.7%) participating pharmacists were females. More than three-quarters (76.76%) of the study participants had a bachelor's degree in pharmacy. Nearly two-thirds of the study participants were healthy singles who engaged in additional employment, such as working as medical representatives or in community pharmacies, in addition to their primary roles in the hospital. Further details about the socio-demographics of study participants are given in Table 1. Table 2 shows that 80% of the participating pharmacists had a moderate level of stress. On the other hand, more than half of study participants were satisfied with their overall health (52%) and QOL (57.33%). Regarding QOL domains, the average physical health, psychological health, social relationships, and environment were 3.12, 3.28, 3.32, and 2.98, respectively. Table 3 shows that pharmacists who engaged in additional employment (working for extra hours) had a significant effect on increasing the level of stress among pharmacists, while all other socio-demographic factors did not have a significant effect on the pharmacists' stress level. On the other hand, QOL was not significantly affected by all socio-demographic factors. Table 4 shows that stress is inversely correlated with the pharmacist's QOL, overall health, and all QOL domains (physical health, psychological health, social relationships, and environment).

DISCUSSION

The result of the present study showed that most participating pharmacists had a moderate level of stress. Similarly, Shahin and colleagues found that most Australian pharmacists suffered from moderate levels of work-related stress during the COVID-19 pandemic [13]. Despite the apparent similarity in the stress level between the Australian and Iraqi pharmacists, there is a major difference in the period of conducting both studies.

Table 1: Socio-demographics of study participants (n=150)

Parameter		Value
Age (year) mean±SD		31.0±6.98
Gender	Male	62(41.33)
	Female	88(58.67)
Field of practice	Internal pharmacy	24(16)
	Outpatient pharmacy	29(19.33)
	Clinical pharmacy	23(15.33)
	Drug store	26(17.33)
	Emergency pharmacy	27(18)
	Sentinel Pharmacy	21(14)
Academic degree	BSc	115 (76.76)
	High diploma	25 (16.67)
	Master	10 (6.67)
Working experience (year) mean±SD		6.43±6.18
Having administrative responsibility	Yes	52(34.67)
	No	98(65.33)
Marital status	Married	72(48)
	Single	78(52)
Having chronic diseases (Diabetes, hypertension, ulcer, asthma, systemic lupus erythematosus, osteoarthritis, and arrhythmia)	Yes	33(22)
	No	117(78)
Extra working hours	No	57(38)
	Yes, in pharmacy	65(43.33)
	Yes, in drug promotion	28(18.67)

Values are expressed as frequency, percentage, and mean±SD

Table 2: The level of stress and QOL among study participants (n=150)

Parameter		Value
Stress	Mean±SD	20.32 ± 5.37
	Low (score <14)	16(10.67)
	Moderate (score 14-26)	120(80)
	High (score ≥27)	14(9.33)
QOL	Mean±SD	3.61±0.80
	Satisfied*	86(57.33)
	Not satisfied nor unsatisfied	55(36.67)
	Not satisfied#	9(6)
Overall health	Mean±SD	3.44±0.91
	Satisfied*	78(52)
	Not satisfied nor unsatisfied	49(32.67)
	Not satisfied#	23(21.33)
QOL domains	Physical health (score ranged from 1 to 5)	3.12±0.61
	Psychological health (score ranged from 1 to 5)	3.28±0.62
	Social relationships (score ranged from 1 to 5)	3.32±0.69
	Environment (score ranged from 1 to 5)	2.98±0.66

Values are expressed as frequency, percentage, and mean±SD. *Scoring of 4 and 5 were considered as satisfied; # scoring of 1 and 2 were considered as not satisfied.

Table 3: Factors affecting on pharmacist's level of stress and QOL (n=150)

Parameter		Level of Stress			*p*	QOL			*p*
		Low (0-13)	Moderate (14-26)	High (27-40)		Low (1 & 2)	Moderate (3)	High (4 & 5)	
Gender	Male	5(8.1)	51(82.25)	6(9.7)	0.68	3(4.83)	25(40.32)	34(54.83)	0.69
	Female	11(12.5)	69(78.4)	8(9.1)		6(6.81)	30(34.1)	52(59.1)	
Working place	Outpatient	2(6.9)	24(82.8)	3(10.34)		3(10.34)	9(31.03)	17(58.62)	
	Internal	4(16)	19(76)	2(8)		1(4.2)	8(33.33)	15(62.5)	
	Clinical	3(13.04)	16(69.6)	4(17.4)		0	8(33.33)	16(66.7)	
	Emergency	5(18.5)	21(77.8)	1(3.7)	0.54	1(3.84)	9(34.61)	16(61.53)	0.74
	Sentinel	2(9.5)	17(80.95)	2(9.5)		3(14.3)	10(47.61)	8(38.1)	
	Drug store	0	23(92)	2(8)		1(3.84)	11(42.30)	14(53.84)	
Engagement in additional work	Yes	11(11.82)	69(74.2)	13(13.97)	0.03	7(7.60)	29(31.52)	56(60.9)	0.19
	No	5(8.8)	51(89.5)	1(1.8)		2(3.44)	26(44.82)	30(51.72)	
Administrative responsibilities	Yes	4(7.7)	43(82.7)	5(9.61)	0.69	3(5.8)	21(40.4)	28(53.84)	0.78
	No	12(12.24)	77(78.6)	9(9.2)		6(6.12)	34(34.7)	58(59.2)	
Marital status	Yes	8(11.11)	59(81.94)	5(6.94)	0.63	6(8.5)	25(35.21)	40(56.33)	0.48
	No	8(10.3)	61(78.2)	9(11.53)		3(3.8)	30(37.97)	46(58.22)	
Having chronic diseases	Yes	2(6.1)	29(87.9)	2(6.1)	0.44	2(6.1)	16(48.5)	15(45.5)	0.26
	No	14(11.96)	91(77.8)	12(10.3)		7(5.98)	39(33.33)	71(60.7)	

Table 4: The association between pharmacists' stress and QOL

Parameter		R	*p*-value
Stress	QOL	-0.388	0.000
	Overall health	-0.321	0.000
	Physical health	-0.372	0.000
	Psychological	-0.442	0.000
	Social relationships	-0.323	0.000
	Environment	-0.339	0.000

In this context, the Australian study was conducted during the COVID-19 pandemic, a period that is widely acknowledged as a major source of stress for hospital pharmacists and other healthcare providers [14]. In contrast, the current study took place after the peak of the pandemic had subsided. Therefore, it is possible that the level of stress among Iraqi pharmacists is higher than that for Australian pharmacists. This possibility may be reasonable since pharmacists in Iraqi hospitals are facing many unique challenges, such as insufficient technology and tools and the unfriendly hospital environment [15]. Additionally, the results of the current study indicated that there is a non-significant difference in stress levels between male and female pharmacists. This finding contrasts with a cross-sectional study conducted among pharmacists in hospitals across the USA, which reported higher stress levels among female pharmacists [16]. The discrepancy in results could be attributed to the fact that both male and female pharmacists in Iraqi hospitals share the same responsibilities and encounter similar challenges [15].Regarding the factors influencing pharmacists' stress level, the current study results found that engagement in additional employment is the main factor that increases the level of stress among Iraqi pharmacists. Similarly, Gaither and colleagues in their study that assessed factors influencing the level of stress among US pharmacists found that working for extra hours is the main enhancing factor for stress [4]. Meanwhile, it is not strange to get this finding since working extra hours ultimately reduces the pharmacist's available time for doing relaxing activities [17] and even for sleep [18]. Therefore, it is highly recommended that the Iraqi Ministry of Health increase the salary of hospital pharmacists to reduce their need to join extra-hours jobs. On the other hand, having chronic diseases was not found to be a significant factor in increasing the level of stress for participating pharmacists. This finding contrasts with numerous studies that indicated a correlation between chronic illnesses and heightened stress levels [19,20]. The discrepancy in results between prior studies and the current one may be attributed to the small sample size in the current study, as well as the limited number of participants with chronic conditions in this study. Furthermore, it is possible that the stress caused by chronic diseases is lower than the stress experienced by Iraqi pharmacists due to the demands and challenges of their professional responsibilities. The present study results showed that slightly more than half of participants were satisfied with their overall health and QOL. Moreover, they were more satisfied with their psychological and social QOL while less satisfied with the physical and environmental domains of QOL. Both of the above findings were also detected among pharmacists working in other developing countries, namely Iran [21] and Pakistan [22]. Regarding the factors influencing QOL, the results of the present study showed that stress is inversely correlated with the pharmacist's overall health, QOL, and all QOL domains. A similar finding was obtained in studies conducted in many other Middle Eastern countries [23-25]. The current finding was highly expected since work stress can negatively affect mental health by inducing anxiety and depression [18], physical health by inducing occupational injuries [18], and social relationships by reducing time available for the family [25]. The major limitation of the current study was the convenient nature of the study being small. Conducting the study in Baghdad only is another limitation for the generalizability of study results; therefore, repeating the study by including a random sample of hospital pharmacists from all Iraqi governorates is necessary. Despite the above limitations, the current study is pioneering in its focus on stress factors affecting Iraqi pharmacists, reinforcing the importance of addressing occupational health in pharmacy practice to preserve both pharmacists' health and the quality of pharmaceutical care.

Conclusion

Iraqi pharmacists who work in Baghdad hospitals suffer from a moderate level of stress. Working for extra hours can exacerbate stress. Pharmacists' job stress can negatively reduce their QOL.

Conflict of interests

No conflict of interest was declared by the authors.

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Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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