



**Research Article**

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# Occupational Stress among Practicing Pharmacists in Pakistan: The Current Delima



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## Abstract

Pharmacy profession is not well acknowledged in terms of incentives and recognition in Pakistan. Long working hours, uncomfortable work environment, low salary/incentives, increasing work load, absence of performance indicators, and lack of system support has led to increased stress which not only effect productivity and outcomes of individuals but also systems

**Objective:** The present study was designed to assess stress among practicing pharmacists in twin cities of Pakistan.

**Methodology:** A descriptive cross-sectional study design was used. A semi-structured questionnaire developed through extensive review of the literature and from Community Epidemiological Screening for Depression was self-administered to a sample of 382 practicing pharmacist working in different settings in twin cities of Pakistan. After data collection, data was cleaned coded and entered in SPSS version 21.0. Descriptive statistics comprising of frequency and percentages was calculated. The non-parametric tests including Mann-Whitney and Kruskal-Walis ( $p \geq 0.05$ ) were performed to find out the difference among different variables.

**Results:** The results of the current study reported a significant difference in stress level of pharmacist working in different sectors ( $p=0.003$ ), field of practice ( $p=0.001$ ), age group ( $p=0.002$ ), marital status ( $p=0.001$ ) and salary structure ( $p=0.001$ ).

**Conclusion:** The present study concluded that almost all of the pharmacists practicing in twin cities were moderately stressed irrespective of the gender, age and sector of practice. Low salary structure, lesser work experience, lack of support system and training in order to cope with the upcoming challenges were found as major contributing factors towards practicing pharmacists in Pakistan.

**Keywords:** Different fields; Occupational; Pharmacists; Pakistan; Stress

## Introduction

Stress affects both the professional and nonprofessional part of community and reduces quality of life. Increasing advancements in the healthcare profession are making it difficult for healthcare professional to cope with the standards [1]. Pharmacy profession has become diverse globally in terms of services provided to patient which has created stress among the pharmacists. The healthcare professionals have to work comparatively harder to meet the demands of community due to inadequate resources in comparison to needs in developing countries [2]. A study conducted in South Africa specifically on hospital pharmacists revealed that main stressors for hospital pharmacists were job requirements, poor resources, type of pharmacy and lack of medicine supply [3]. Similarly, another study conducted on community pharmacists in Serbia reported 50% of the pharmacists suffering from anxiety and burnout [4].

Pharmacy profession is not well acknowledged in terms of incentives and recognition in Pakistan. Long working hours, uncomfortable work environment, low salary/incentives, increasing work load, absence of performance indicators, and lack of system support has led to increased stress which not only effect productivity and outcomes of individuals but also systems [5]. Job related stress is one of the major contributors towards the poor performance of professionals [6]. Stress not only affects the performance of person but also reduces efficiency of organization. Extensive research is required to explore the contributing factors towards stress among healthcare professionals in country. Although, studies have been conducted on assessment of stress level among doctors, nurses and students of different healthcare professions [7-10]. But to the best of our knowledge, no study has ever assessed

stress level among practicing pharmacists in Pakistan. Thus, the present study was designed to assess different levels of stress among practicing pharmacists from different fields in twin cities of Pakistan.

### Methodology

#### Study Design

A descriptive cross-sectional study design was used. Approval was obtained for the study from the Ethical Committee of Hamdard University. Moreover in Pakistan, questionnaire-based studies do not need any endorsement from Ministry of Health. Despite that, prior information was sent to the Ministry of Health, Government of Pakistan for the execution of this research. Beside this, approval for the data collection was also taken from MS of hospitals, chief executives of pharmaceutical industries, proprietors of community pharmacies, director of pharmacy institutions and respective heads of regulatory authorities.

#### Study Population, Sample Size and Sampling of Respondents

This study was conducted from September to December 2016. All pharmacists of Islamabad, Rawalpindi working in fields of academia, hospitals, community pharmacies, industries, marketing and regulatory authority both from public and private sector were included in study population to assess different levels of stress. The sampling frame was comprised of professionally qualified pharmacists working in private and public sector in twin cities i.e. Islamabad and Rawalpindi of Pakistan. Study respondents included pharmacists working in fields of academia, hospitals, community pharmacies, industries, marketing and regulatory authority. Twenty industries, eight public and 13 private hospitals, fifty community pharmacies and five academic institutions were selected for data collection. Due to the absence of a database indicating the exact number of registered pharmacists in the country, as a general rule of thumb for sample size calculation, the current population of registered pharmacist was considered (N = 20,000), sample size of 382 was required to achieve 95% confidence level with 5% margin of error using Raosoft® sample size calculator. Six groups of pharmacists were formed (academia, hospital, industry, regulatory authority, community pharmacy and marketing) composed of 60-80 respondents in each group.

#### Study Tool

A semi-structured questionnaire was developed through extensive review of the literature and from Community Epidemiological Screening for Depression. The questionnaire is divided into two sections. Section I comprises of demographic data including age, gender, marital status, field of practice, current position, sector of practice, level of experience and salary. Section II includes questions related to different factors depicting level of stress. Five questions were used to assess intrapersonal factors like sleeping habit, appetite, life failure

and hopeful attitude towards life. Seven questions were used to assess interpersonal factors depicting level of stress which included questions related to attitude, behavior, feeling of being disliked and trouble in focusing. Eight questions were used to assess symptoms of stress which included questions related to happiness, sadness, depression, fear, enjoyment and crying spells. Four point scale from never to mostly was used to assess responses in the tool. The tool was scored from 1 to 4, with a score of 1 indicating never/rarely, score of 2 indicating sometime/a little of time, score of 3 indicating occasionally/moderate amount of time and score of 4 indicating mostly/ all of time. The scoring is in reverse order for question number 4, 8, 12 and 16. The overall score was calculated by summing the responses. A lower score indicated high level of stress whereas a high score indicated low level of stress. The total range of possible stress score was between 0-60 where 0 score indicates high stress level and score of 60 indicates low stress level.

#### Reliability and Validity of the Tool

Two focused group discussions with experts from hospital, community pharmacies, academia, regulatory affairs and industries for face and content validation of the tool were conducted. Beside this pilot testing was conducted at 10% of sample size to test the reliability of the tool after data collection. Value of Cronbach alpha for the tool was 0.78, which is satisfactory considering that 0.70 is the cutoff value for being acceptable.

#### Data Collection and Analysis

Two teams, one in each city, with 10 data collectors in each team, were trained by the group of experts including the principal investigator. The questionnaire was hand-delivered to pharmacists by the data collectors. Informed and verbal consent for participation was taken from the respondents. The questionnaires were self-completed by the pharmacists and were collected from them on the same day. After data collection, data was cleaned, coded and entered in SPSS version 21. Skewness tests were performed and histograms with normal curves were used to check the normal distribution of data. Descriptive statistics of frequency and percentage were calculated.

### Results

#### Demographic characteristics of respondents

Out of 382 respondents, 60.20% (n=230) were male while 39.79% (n=152) were female. Eleven percent (n =44) of the total respondents were working in public sector while 88.48% (n=338) were working in private sector. Of the total respondents, 15.96% (n=61) were from academia, 14.13% (n=54) were from community pharmacies, 21.98% (n=84) were from hospitals, 24.08% (n=92) were from industry, 1.04% (n=4) were from regulatory and 22.77% (n=87) were from sales and marketing. Regarding the experience of respondents, 47.64% (n=182) had working experience of less than one year, 39%

(n=149) had working experience of 1-5 years, 7.85% (n=30) had experience of greater than 10 years. A detailed description is an experience of 5-10 years while 5.49% (n=21) had working given (Table 1).

**Table 1:** Demographic Characteristics of respondents.

Indicator		Islamabad n(%)	Rawalpindi n(%)	Total n(%)
Age	20-30Y	130 (34.03)	154 (40.31)	284 (74.34)
	31-40Y	50 (13.08)	38 (9.94)	88 (23.03)
	41-50Y	6 (1.57)	4 (1.04)	10 (2.61)
Gender	Male	108 (28.27)	122 (31.93)	230 (60.20)
	Female	78 (20.41)	74 (19.37)	152 (39.79)
Marital status	Married	94 (24.60)	78 (20.41)	172 (45.02)
	Unmarried	92 (24.08)	118 (30.89)	210 (54.97)
Field of practice	Academia	60 (15.70)	1(0.26)	61 (15.96)
	Community	36 (9.42)	18 (4.71)	54 (14.13)
	Hospital	33 (8.63)	51 (13.35)	84 (21.98)
	Industry	21 (5.49)	71 (18.58)	92 (24.08)
	Regulatory	3 (0.78)	1 (0.26)	4 (1.04)
Sector of practice	Sales & Marketing	32 (8.37)	55 (14.39)	87 (22.77)
	Public	28 (7.32)	16 (4.18)	44 (11.51)
Level of experience	Private	158 (41.36)	180 (47.12)	338 (88.48)
	<1 year	82 (21.46)	100 (26.17)	182 (47.64)
	1-5 years	79 (20.68)	70 (18.32)	149 (39)
Current salary	6-10 years	14 (3.66)	16 (4.18)	30 (7.85)
	>10 years	11 (2.87)	10 (2.61)	21 (5.49)
	Rs.10-20,000	64 (16.75)	97 (25.39)	161 (42.14)
	Rs.21-35,000	68 (17.80)	62 (16.23)	130 (34.03)
	Rs.36-50,000	24 (6.28)	17 (4.45)	41 (10.73)
	>Rs.50,000	30 (7.85)	20 (5.23)	50 (13.08)

**Assessment of Stress among the Practicing Pharmacists in Twin Cities of Pakistan**

Out of 382 respondents, 40.05% (n=153) never had poor appetite, 41.09% (n=157) mostly felt hopeful about future. On

the other hand 61.51% (n=235) never thought that their life is a failure and 39.26% (n=150) never had restless sleep. While 32.46% (n=124) mostly enjoyed life, 32.19% (n=123) were never depressed, 48.69 % (n=186) never had crying spells and 23.56% (90) never felt sad (Table 2).

**Table 2:** Assessment of stress among the practicing pharmacists in twin cities of Pakistan.

Indicator	Never or Rarely (<1 day) n (%)	Sometime or A little of time (1-2 days) n (%)	Occasionally or Moderate amount of time (3-4 days) n (%)	Mostly or All of the time (5-7 days)n(%)
<b>Intrapersonal factors depicting level of stress</b>				
I was bothered by the things that usually don't bother me.	100 (26.17)	168 (43.97)	94 (24.60)	20 (5.23)
I felt that I could not shake off the blues even with help from my family or friends.	122 (31.93)	155 (40.57)	84 (21.98)	21 (5.49)
I felt that I was just as good as other people.	54 (14.13)	71 (18.58)	157 (41.09)	100 (26.17)
I had trouble keeping my mind on what I was doing.	105 (27.48)	172 (45.02)	82 (21.46)	23 (6.02)

I felt that everything I did was an effort	49 (12.82)	106 (27.74)	120 (31.41)	107 (28.01)
<b>People were unfriendly</b>				
	126 (32.98)	137 (35.86)	88 (23.03)	31 (8.11)
I felt that people dislike me.	201 (52.61)	126 (32.98)	34 (8.90)	21 (5.49)
<b>Interpersonal factors depicting level of stress</b>				
I was bothered by the things that usually don't bother me.	100 (26.17)	168 (43.97)	94 (24.60)	20 (5.23)
I felt that I could not shake off the blues even with help from my family or friends.	122 (31.93)	155 (40.57)	84 (21.98)	21 (5.49)
I felt that I was just as good as other people.	54 (14.13)	71 (18.58)	157 (41.09)	100 (26.17)
I had trouble keeping my mind on what I was doing.	105 (27.48)	172 (45.02)	82 (21.46)	23 (6.02)
I felt that everything I did was an effort	49 (12.82)	106 (27.74)	120 (31.41)	107 (28.01)
<b>People were unfriendly</b>				
	126 (32.98)	137 (35.86)	88 (23.03)	31 (8.11)
I felt that people dislike me.	201 (52.61)	126 (32.98)	34 (8.90)	21 (5.49)
<b>Stress symptoms depicting level of stress</b>				
I felt depressed.	123 (32.19)	154 (40.31)	65 (17.01)	40 (10.47)
I felt fearful.	183 (47.90)	117 (30.62)	59 (15.44)	23 (6.02)
I was happy.	24 (6.28)	84 (21.98)	146 (38.21)	128 (33.50)
I talked less than usual.	99 (25.91)	124 (32.46)	113 (29.58)	46 (12.04)
I felt lonely.	130 (34.03)	134 (35.07)	65 (17.01)	53 (13.87)
I enjoyed life.	39 (10.20)	88 (23.03)	131 (34.29)	124 (32.46)
I had crying spells.	186 (48.69)	107 (28.01)	66 (17.27)	23 (6.02)
I felt sad.	90 (23.56)	161 (42.14)	94 (24.60)	37 (9.68)

**Mean Scores of Stress Level of Practicing Pharmacists**

The results showed that pharmacists of age group 20-30y (24.76, ± 8.004) were most stressed among all. Male pharmacists (23.96, ± 7.712) were comparatively more stressed than females. Unmarried pharmacists (24.98, ±7.503) were more stressed than the married pharmacists. Pharmacists working in regulatory department (15.75, ± 2.872) were not stressed among

all. Pharmacists working in Rawalpindi (24.05, ± 7.842) were more stressed than those working in Islamabad. Pharmacists practicing in private sector (24.23, ± 8.166) were more stressed than the public sector employees. Pharmacists having a work experience of 1-5y (24.37, ± 8.116) were most stressed than rest of the pharmacists. Pharmacists having salary below 35,000 and above 20,000 (27.19, ± 7.231) were most stressed among all practicing pharmacists. Detailed description is given (Table 3).

**Table 3:** Mean scores of stress level of practicing pharmacists.

Variable		n	Stress Score (0-60) Mean (± S.D)	Median	Inter-quartile Range
Age	20-30Y	284	24.76,(±8.00435)	24	12
	31-40Y	88	21.52,(±7.20150)	21	10
	41-50Y	10	18.77,(±9.27062)	16	18
Gender	Male	230	23.96,(±7.71225)	24	11
	Female	152	23.71,(±8.40090)	23	13

Marital status	Married	172	22.50,(±8.35366)	21	13
	Unmarried	210	24.98,(±7.50372)	25	9
Field of practice	Academia	61	24.18,(±9.04896)	23	15
	Community	54	21.50,(±6.73137)	22	10
	Hospital	84	22.30,(±7.13379)	21	7.75
	Industry	92	26.10,(±7.82705)	28	9
	Regulatory	4	15.75,(±2.87228)	16	5.25
	Sales & Marketing	87	24.60,(±8.5376)	24	12
City	Islamabad	192	23.67,(±8.13627)	23	12
	Rawalpindi	190	24.05,(±7.84286)	24	10.25
Sector of practice	Public	44	21.04,(±5.73019)	19.5	7
	Private	338	24.23,(±8.16666)	24	12
Level of experience	<1 year	182	24.10,(±8.09877)	24	12.25
	1-5 years	149	24.37,(±8.11695)	24	12.5
	6-10 years	30	21.93,(±5.21889)	21	6.5
	>10 years	21	20.85,(±8.71370)	24	16
Current salary	Rs.10-20,000	161	23.11,(±8.24347)	23	12.5
	Rs.21-35,000	130	27.19,(±7.23160)	27	11
	Rs.36-50,000	41	20.19,(±5.09519)	20	7.5
	>Rs.50,000	50	20.62,(±7.84776)	19	14

**Table 4:** Mean scores of stress level by different demographic characteristics.

Variable		n	Mean rank Score	Test Statistics	p-value
Age	20-30Y	284	203.33	13.204 <sup>b</sup>	0.002
	31-40Y	88	159.73		
	41-50Y	10	133.78		
Gender	Male	230	192.51	17248.000 <sup>a</sup>	0.413
	Female	152	189.976		
Marital status	Married	172	171.53	14626.000 <sup>a</sup>	0.001
	Unmarried	210	207.85		
City	Islamabad	192	185.91	17166.000 <sup>a</sup>	0.166
	Rawalpindi	190	197.15		
Field of practice	Academia	61	188.25	27.131 <sup>b</sup>	0.001
	Community	54	158.25		
	Hospital	84	167.00		
	Industry	92	232.01		
	Regulatory	4	68.38		
	Sales & Marketing	87	200.89		
Sector of practice	Public	44	147.60	5504.500 <sup>a</sup>	0.003
	Private	338	197.21		

Level of experience	<1 year	182	195.51	4.212 <sup>b</sup>	0.242
	1-5 years	149	196.69		
	6-10 years	30	161.90		
	>10 years	21	162.21		
Current salary	Rs.10-20,000	161	180.57	40.774 <sup>b</sup>	0.001
	Rs.21-35,000	130	237.53		
	Rs.36-50,000	41	136.77		
	>Rs.50,000	50	151.88		

Assessment of stress among different demographic variables using Mann-Whitney and Kruskal-Wallis test demonstrated a significant difference in stress level of pharmacist working in different sectors ( $p=0.003$ ), field of practice ( $p=0.001$ ), age group ( $p=0.002$ ), marital status ( $p=0.001$ ) and salary structure ( $p=0.001$ ). A detailed description is given (Table 4).

### Discussion

Stress is one of the key factors that influence the performance of healthcare professional including pharmacists. The increased prevalence of stress among pharmacists show decreased quality of services provided by them. The current study revealed that among the practicing pharmacists the younger age group 21-30 years were found more stressed as compared to the senior pharmacists. This might be due to lack of training, lesser job facilities, family pressures and tough job requirements while senior pharmacists might be comparatively less stressed due to the fact that they have usually gained better job facilities and adopted to the job requirements. Similar findings were reported in a study conducted in nurses working in hospitals of KSA [11].

Gender is another important factor in etiology of stress. The recent study showed that there is a significant difference in the stress levels of male and female pharmacists. This might be due to the fact that females and males also equally share the financial and social burden along with the males in terms of professional as well as personal life. Similar findings were reported from a study conducted in Germany in healthcare professionals [12].

The present study reported unmarried pharmacists were relatively found more stressed than the married ones. This might be due to the fact that unmarried pharmacists are either mostly in the beginning stage of their professional carrier or in search of employment for earning and these factors makes them more prone to anxiety and stress. In addition to this family pressure as being the younger member of family promotes anxiety and stress. Contrary findings were shown in another study conducted in Iran showing that married healthcare professionals were more stressed [13].

The present study reported that pharmacists working in public sector were found less stressed than the pharmacists employed in private sector which might be due to better job facilities, support system and promotions. The findings in line with another study conducted in Bangladesh reporting

employees working in private organizations more stressed [14]. The current study showed that pharmacists working in regulatory affairs were least stressed as they have liberty and better job facilities while hospital pharmacists and community pharmacists were comparatively more stressed due to the workload and social pressures. Similar findings were reported in a study conducted in Ireland which showed hospital pharmacists were more stressed [15]. On the other hand the current study also found that the pharmacists working in industries and marketing and sales department are stressed which might be due to the job environment and excessive workload which is not justified with the salary and appreciation that is granted to them. Similar findings were reported in a study conducted in [16]. The current study reported lower salary structure and less experience as main contributing stress factors towards stress among practicing pharmacists. Similar findings were reported in a study conducted in United States of America reported low salary structure and growth opportunities as main reasons for stress among employees [17].

### Limitations of Study

Time and financial constraints were few of the limitations faced during the conduction of the study. The study was conducted in the two cities of Pakistan and the results of the study may not be generalizable to other parts of the country. Unavailability of an updated database of registered pharmacists in twin cities was also a major hurdle faced during data collection.

### Conclusion

The present study concluded that almost all of the pharmacists practicing in twin cities were moderately stressed irrespective of the gender, age and sector of practice. However female pharmacists, unmarried and working in private sector are relatively more stressed. Low salary structure, lesser work experience, lack of support system and training in order to cope with the upcoming challenges were found as major contributing factors towards practicing pharmacists in Pakistan. In order to improve the current scenario all stakeholders must collaborate to develop a long term plan for developing a sustainable support system of a support system with well defined appraisal system for the pharmacists to improve job facilities leading to improved quality of services. The system should be designed in a way to address the upcoming changes and challenges of the profession and to respond quickly to them. There should be training

programs for stress management for on job pharmacists for improving adaptability to work environment and facilitating the employees.

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