Libyan Journal of Medical and Applied Sciences LJMAS
Online ISSN: 3006-1113
Volume 3, Issue 4, 2025, Page No: 87-93
Website: https://ljmas.com/index.php/journal/index

Workplace Stress among Pediatricians in Benghazi Children Hospital

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Received: October 03, 2025 Accepted: December 26, 2025 Published: December 30, 2025

Cite this article as: A, Eltarhuni., J, El-Abidi., H, Tawfeeq. (2025). Workplace Stress among Pediatricians in Benghazi Children Hospital. Libyan Journal of Medical and Applied Sciences (LJMAS). 2025;3(4):87-93.

Abstract

Background: Health care workers are prone to stress as well as other occupational health risks. This study aimed to investigate the sources of job stress among pediatricians working at Benghazi Children Hospital and to determine its difference with personal characteristics.

Materials and Methods: A cross-sectional descriptive study was carried out at Benghazi Children Hospital. A random sample of 132 pediatricians was selected from 200 pediatricians working in Benghazi Children Hospital. Usable returns were received from 128 pediatricians. A self-administered questionnaire included two main parts: personal characteristics of physicians and 41 work-related stress questions. The statistical tool SPSS was used for the analysis. Descriptive statistics, T-test, and one-way ANOVA were used to analyze the data generated.

Results: The results showed half of the pediatricians were categorized as having a moderate level of stress, followed by slightly less than half of them having a high level of job stress. According to the statements, responsibility for child life, the possibility of exposure to infection, workload, and inadequate income compared to qualification level were the commonest sources of stress. Significant differences were found between stress and gender, age, experience, and professional position. There was no significant difference between stress and marital status, qualification, and monthly income.

Conclusion: Study results concluded that pediatricians in the target hospital experienced moderate to high stress. To reduce job stress, it was recommended that workload should be minimized and the presence of seniors while dealing with critical patients assisted in reducing the stress level among junior physicians.

Key Word: Job Stress, Pediatrician, Prevalence, Hospital.

ضغوط العمل بين أطباء الأطفال في مستشفى بنغازي للأطفال

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الملخص

الخلفية: يُعد العاملون في الرعاية الصحية عرضة للضغوط إلى جانب مخاطر الصحة المهنية الأخرى. هدفت هذه الدراسة إلى استقصاء مصادر ضغوط العمل لدى أطباء الأطفال العاملين في مستشفى بنغازي للأطفال، وتحديد الفروقات في مستويات الضغوط وفقًا للخصائص الشخصية.

منهجية البحث: أُجريت دراسة وصفية مقطعية في مستشفى بنغازي للأطفال. تم اختيار عينة عشوائية مكوّنة من 132 طبيب أطفال من أصل 200 طبيب يعملون بالمستشفى، وتم الحصول على 128 استبانة صالحة للتحليل. استُخدمت استبانة ذاتية التعبئة تضمنت جزأين رئيسيين: الخصائص الشخصية للأطباء، و41 فقرة تتعلق بالضغوط المرتبطة بالعمل. استُخدم برنامج

SPSSللتحليل الإحصائي، حيث طُبقت الإحصاءات الوصفية، واختبار(T) ، وتحليل التباين الأحادي (ANOVA) لتحليل البيانات.
النتائج: أظهرت النتائج أن نصف أطباء الأطفال صُنِّفوا ضمن مستوى ضغوط متوسط، في حين عانى ما يقارب نصفهم من مستوى مرتفع من الضغوط. ووفقًا لعبارات الاستبانة، تمثلت أكثر مصادر الضغوط شيوعًا في المسؤولية عن حياة الأطفال، وإمكانية التعرض للعدوى، وضغط عبء العمل، وعدم كفاية الدخل مقارنة بالمستوى العلمي والمؤهلات. كما وُجدت فروق ذات دلالة إحصائية بين مستويات الضغوط وكل من الجنس، والعمر، وسنوات الخبرة، والمسمى الوظيفي. في المقابل، لم تُسجَّل فروق ذات دلالة إحصائية بين مستويات الضغوط وكل من الحالة الاجتماعية، والمؤهل العلمي، والدخل الشهري.
الاستنتاج :خلصت نتائج الدراسة إلى أن أطباء الأطفال في مستشفى بنغازي للأطفال يعانون من مستويات ضغوط تتراوح بين المتوسطة والمرتفعة. وللحد من الضغوط، أوصت الدراسة بتقليل عبء العمل، وتعزيز وجود الأطباء ذوي الخبرة عند التعامل مع الحالات الحرجة، لما لذلك من دور في خفض مستويات الضغوط لدى الأطباء الأصغر سنًا.

الكلمات المفتاحية :الضغوط، طبيب الأطفال، معدل الانتشار، المستشفى.

Introduction

In modern society, people spend most of their time at work. Job stress is a recognized issue in people's working lives [1]. Exposure to stress and various work pressures, especially in jobs related to professional accuracy, whose outcomes are linked to human life, such as working in health and making the right decisions, particularly for doctors, which requires that the decision be taken with a sound mentality that is not affected by any pressure or stress factors that may cause a wrong decision to be taken, which will reflect negatively on the patient's life.

Thus, the health sector is very sensitive; medicine is perceived as an inherently stressful profession. Doctors are more vulnerable to workplace stress than other professions due to unique work responsibilities [1].

The term "stress" has been defined in a variety of ways over the years because of the complex nature of stress. It is considered a new old concept, and its origin in the Latin word stringere-to draw tight, then included the concepts of pressure, strain, or force. At the beginning of the twenty centuries, introduced by Selye and recently it was described as an outside stimulus and the person's response to it [2,3].

Stress is a physical or psychological disorder associated with an occupational environment that occurs when the individual is unable to cope with the demands and pressure of a situation [4].

Working under stress can have an influence on healthcare professionals and entire organization [5,6].

Doctors who are exposed to stress, whether acute, temporary or chronic, will be vulnerable to many health problems. Physical symptoms that may occur because of occupational stress include fatigue, headaches, stomach problems, muscle aches and pains, chronic mild illness, sleep disturbances, and eating disorders. Psychological and behavioral problems that may develop include anxiety, irritability, feeling powerless and low morale [7].

Excessive workload, the lack of appreciation by their superiors and the ignoring of the efforts made by doctors in exceptional circumstances such as the spread of epidemics, as happened in the crisis of the Corona epidemic, where the medical teams were exposed to great effort and unprecedented psychological pressure. One of the organizational outcomes affected by occupational stress is job performance, and prolonged stress can lead to occupational burnout [7].

Significance of the study

Occupational stress has long been a challenge for healthcare workers. Pediatricians are exposed to many stressors when dealing with sick children, their emotional and desperate parents, as well as other demands of their workplace, which may be extra stressful compared to other specialties.

Prolonged stress in the workplace is increasingly perceived as one of the most serious occupational health hazards, decreasing satisfaction, quality, and productivity of workers and raising absenteeism due to sickness, turnover, and organizational inefficiency. Studying the causes and factors of influence on stress to which physicians are exposed is very important to creating a healthy environment for work and improving the state of general satisfaction with work.

There are several studies on stress among physicians, but there is a dearth of documented research on the sources of stress among doctors in Libya. Therefore, the present study aimed to determine levels and sources of job-related stress among physicians at Benghazi Children Hospital and to demonstrate the difference between stress and personal characteristics.

Hypotheses

The following hypotheses were developed for testing:

The main hypothesis: there is a difference between mean stress score and personal characteristics; the following hypotheses emerge from this hypothesis:

First hypothesis: there is a difference between the mean stress score and gender.

Second, there is a difference between the mean stress score and (age, marital status, qualification, professional position, experience, department, and monthly income).

Materials and methods:

Study design and setting

A cross-sectional study was conducted from December 2022 to January 2023 to determine the prevalence of job stress. Benghazi Children Hospital was selected to be the setting of this research. This hospital is a tertiary hospital with 200 beds. The hospital treated more than 18,000 children in 2021. It provides a wide range of health care services to children in the eastern region of Libya.

Population and sample for the study: The population of this study comprised of 200 physicians working at the target hospital. A total of 132 physicians was drawn using random simple sampling techniques. The study enrolled a total of 128 physicians, with a 97% response rate. Sampling criteria included all ages, both sexes and being employed at the hospital units for at least six months. Physicians on annual leave, sick or maternity leave, and those unwilling to participate in the study were excluded.

Instrument for data collection: After a thorough review of the literature, a structured questionnaire was used to collect information regarding job stress, which consisted of two sections. The first section contained questions about sociodemographic characteristics such as age, gender, marital status, years of experience, monthly income, department of work, professional qualification, etc. Causes of Occupational Stress: The second section of a questionnaire was designed to assess work stress experienced by physicians in the hospital environment developed based on the pertinent literature. This instrument contains 41 items divided into subscales: physical environment (workload, nature of work), psychological environment (death and dying; lack of staff support), social environment (conflict with colleagues), organizational factors and financial aspects. Role conflict and role ambiguity.

The questionnaire is scored using a Likert-type scale. The response rate of the items ranged based on the 5-point Likert scale. A scoring system was used and ranging from 1 to 5 as follows: 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (always). Stress has been classified into three categories, namely, low-stress group (0-68), medium-stress group (69-137), and high-stress group (138-205).

Cronbach's alpha coefficient tested internal consistency reliability of the whole questionnaire with a value of 0.821.

Data analysis: The Statistical Package for Social Sciences [SPSS, version 22] was used to analyze the data. Descriptive analysis (display frequency, percentages, mean, and standard deviations) was used to determine the sample characteristics and explore the respondent's sources of job stressors. The normality of the data was assessed using the Kolmogorov-Smirnov test. ANOVA and T-test were used to determine the difference between the independent variables. The Scheffes Test is used in an analysis of variance (ANOVA) to test multiple comparisons among a group of means. Statistical significance was defined as $P < 0.05$.

Results

Characteristics of the participants

One hundred twenty-eight questionnaires were completed and submitted for analysis. Table 1 shows the characteristics of pediatricians in Benghazi Children Hospital by gender, age, education level, experience years, and monthly income.

Of all the respondents, 85.9% were female, 52.3% were married, and the largest age group was less than 35 years old. Almost three-quarters of the respondents (71.9%) were practitioners and had a bachelor's degree. Regarding working experience, most participants had less than ten years of experience, and half earned less than 1000 dinars per month.

There were 30 physicians in medicine, 22 in nephrology, 15 in surgery, 12 in ICU, 12 in neonatal, 9 in gastro, 7 in isolation, 6 in radiation, 5 in cardiology, and the remaining in other departments.

Table 1: Characteristics of the participants

Variables		Frequency	Percent
Gender	Male	18	14.1%
	Female	110	85.9%
Age	>30 years	14	11
	30-34	65	50.8
	35-39	23	18
	40-44	9	7
	45 and more	17	13.3
Marital status	Single	57	44.5
	Married	67	52.3
	Divorce or widow	4	3.1
Qualification	Bachelor	93	72.7
	Master	16	12.5

	Doctorate	19	14.8
Professional positions	Practitioner (intern, resident)	92	71.9
	Specialist	22	17.2
	consultant	14	10.9
Experience	< 1 year	16	12.5
	1-5	38	29.7
	6-10	35	27.3
	11-15	17	13.3
	16-20	7	5.5
	>20 years	15	11.7
Monthly income	>1000	65	50.8
	1000- 1500	40	31.3
	1600- 2000	10	7.8
	>2000	13	10.2

Sources of job stress

The results showed that half of the pediatricians (50%) experienced a moderate level of stress, followed by high stress levels (45.3%), where only 4.7% fall under the low stress group. The mean total stress was moderate (3.3265) with a standard deviation of 0.55949.

According to the dimensions that caused pediatricians' stress (mean > 3.4). Psychological environment was the highest dimension causing stress for pediatricians with a mean of (4.0063), followed by financial aspects, workload, role conflict, and social environment were also causes of stress with a mean (3.9414, 3.6875, 3.6328, and 3.4063), respectively.

On the basis of statements, a high proportion of pediatricians stated they feel responsible for child life (M=4.3877), followed by stressing about the possibility of exposure to infection (M=4.3203) as the commonest sources of stress, and a similar proportion of doctors reported stress about workload (M=4.1641) and inadequate income compared to qualification level (M=4.3203). Many doctors also stated that the possibility of exposure to risk (M=4.1797), unclear hospital policies and instructions (M=3.9766) and the influence of the financial barrier on treatment decisions (M=3.8594) were sources of stress for them. Some doctors have reported stress about working for long hours (M=4.00), worrying about their future career (M=3.8750), dealing with dying and chronically or terminally ill patients (M=3.8359), dealing with patients who do not respond to instructions (M=3.6797) and inappropriate of doctor's offices (M=3.7734) were other sources of stress.

In addition, more than half of pediatricians stated other sources of stress, such as lack of training and opportunity to acquire new skills, the way administration works, inability to balance work and their life (demand of job on family life), inappropriate evaluation of the doctor's performance, working at night, and the lack of equipment, beds, examination rooms, etc. (M= 3.6953, 3.6641, 3.5703, 3.500, 3.4922, and 3.4453).

Job stress and personal variables

First: there is a difference between mean stress and personal characteristics according to gender.

As indicated in Table (2), work-stress level was influenced by gender (P=.018), as a P value less than 0.05. The results showed a significant difference between males and females (t= -2.39). Females were more exposed to work-stress (stress level =3.6894) than males (stress level =3.2870). First hypothesis was accepted.

Table 2: The difference between job stress sources and gender (T-test)

Gender	Mean	SD	T	Sig.
Male	3.2870	.53261	-2.39	.018
Female	3.6894	.67972		

Second: there is a difference between the mean stress score and (age, marital status, qualification, professional position, experience, department, and monthly income).

There was a significant difference between stress and age group of respondents, according to one-way ANOVA (F=3.773, P=.006). A Scheffe post hoc test revealed that the age was statistically significantly different between the two age groups (30-34 years) and 45 years and above, with a mean difference of .55671, P=.046. The age group of 30-34 years was more exposed to stress than other age groups. The second hypothesis accepted according to age.

Table 3: The difference between job stress sources and age

Age	Mean	SD	F	Sig.
>30 y	3.3810	.48229	3.773	.006
30-34	3.8410	.72495		
35-39	3.4928	.59348		
40-44	3.5370	.46976		
≥ 45	3.2843	.57059		

A significant difference was found between stress and experience years of respondents (F=3.178, P=.010). The mean values indicate that the level of stress being experienced by the pediatricians within the experience period of 6-10 years is higher than in other experience years. The difference between the two experience groups (6-10 years) and less than one year was a statistically significant difference with a mean difference (.53780, P=.007), according to the Scheffe test. The second hypothesis was accepted according to the experience.

Table 4: The difference between job stress sources and experience years

Experience	Mean	SD	F	Sig.
<1 y	3.2813	.65467	3.178	.010
1-5	3.8026	.63536		
6-10	3.8190	.74137		
11-15	3.5196	.55554		
16-20	3.6667	.60093		
>20 y	3.2556	.52654		

Mean stress and professional positions differed significantly (F=3.725, P=.027). A Scheffe post hoc test revealed that the difference between practitioner and consultant was statistically significant, with a mean difference of .51165, P=.029. The practitioner was more exposed to stress than other professionals. Thus, the second hypothesis was accepted according to the professional positions.

Table 5: The difference between job stress sources and professional position

Professional position	Mean	SD	F	Sig.
Practitioner (intern, resident)	3.6902	.70693	3.725	.027
Specialist	3.6818	.54895		
consultant	3.1786	.45038		

However, there was no significant association between stress and (marital status, qualification, department, and monthly income).

Discussion

Working is a vital part of many people's life. Work-related stress is a major issue that negatively affects individual employees and organizations, particularly in the health sector. Therefore, this study aimed to examine the level of job stress among physicians working in a Benghazi Children Hospital and demonstrate the difference between stress and personal characteristics.

The findings of the present study revealed that half of the pediatricians experienced a moderate level of stress, 45.3% who had a high level of stress, and only 4.7% had a lower level of stress. This was consistent with the findings of Bagdey, who also found that the majority of interns reported higher stress levels [8]. In comparison to Muthukrishnan et al. (2011), where stress levels were found to be lower, 22.3% of healthcare workers experienced high stress on the job and 56.3% sometimes felt stress, while 21.4% did not experience stress at work [7].

Another study carried out by Adeolu reported that the level of stress was 31.6% and the satisfaction level was higher (84.6%) among junior doctors working in Ibadan [9]. Another study in Banha reported that Egyptian physicians experienced heavier occupational stress and lower job satisfaction [5]. High stress among pediatricians may be due to the nature of their work. A study by Steijn reported that suspicion of violence against children and critically ill children are two subjects that differentiate pediatricians from other specialties and may have a heavy emotional burden [10].

The sources of stress reported by pediatricians fell into the following categories: psychological environment, financial aspects, workload, role conflict, and social environment. Analysis of individual stressor items showed that feeling responsible for the child's life, the possibility of exposure to infection, and the workload, had the highest-rated items. Some of these stressors are similar to the findings from previous studies of stress in doctors.

A study in Ibadan found that the most common stress sources among doctors were time pressure, daily contact with dying and chronically ill patients and twenty-four-hour responsibility for patients' lives [9].
Many studies, including this one, have confirmed that increased workload as a stressor. This was consistent with the findings of Muthukrishnan et al., who also found that heavy workloads caused high stress in hospital employees [7]. Their day in the hospital starts with attending to the patients, inspecting their respective wards, working duties for long hours, and working during the night as well. Heavy workloads are stressful for doctors and may lead to serious medical accidents.
High patient volume, senior pressure, high expectations, and no appreciation of patients were found to be associated with greater job stressors and more psychosomatic symptoms among doctors in Rohtak [1]. Other essential sources of stress were inadequate income compared to qualification level, the possibility of risk exposure, unclear hospital policies and instructions, and the influence of the financial barrier on treatment decisions. A study in India found that underpayment, inadequate facilities, and excessive workload were the sources of stress for interns [8].
Although some studies reported no significant associations between job stress and sociodemographic characteristics [9], the current study found significant differences between job stress and sociodemographic characteristics. This result was in line with Eltarhuni study, which showed significant differences in job stress sources and personal data [6]. Gender was significantly related to occupational stress in several studies. The present study revealed a significant association between stress and gender in which female physicians are more stressed than male physicians in the hospital under study. This finding was contrast in to the previous study [11]. A study in Japan noted gender differences. These differences can be due to the special importance, among females, of keeping free time on days off to meet their family demands, which may give them a better perception of job control. Females responded more to cognition, emotion, and behavior [12].
Age was also different from job stress in this study. High-stress levels among young pediatricians reduced after the age of 35 years. A previous study found that the age group of 50-63 years had the highest score of stress [11]. Practitioners with experienced less than ten years of experience were more exposed to stress than other professionals. Another study found that doctors with an experience period of 11-20 years had the highest stress level; this may be a result of administrative responsibilities [11]. There was no significant association between stress and (marital status, qualification, department, and monthly income. This is partly in concordance with a previous finding among hospital staff in Saudi Arabia that indicated that stress was not influenced by marital status [13].
A number of limitations of this study need to be considered. First, the sample was small and collected from physicians in children's hospital only, and excluded other hospitals. Hence the results cannot be generalized for all physicians in Benghazi. Second, many studies have shown that physicians working in certain departments (such as emergency departments) could experience higher stress levels. However, this was not considered in the present study. Nevertheless, this was the first study in Libya to measure the stress levels among pediatricians working in public hospitals. Further studies should include health professionals from public hospitals to obtain a more general picture of the stress.

Conclusion

The results of this study demonstrated a high prevalence of job stress among the studied pediatricians in the targeted hospital. The maximum number of pediatricians falls under the moderate stress level category, followed by the high-stress level category. The causes of stress were to be identified, and actions needed to be taken to eliminate them. Therefore, it was recommended that the need to pay closer attention to how doctors deal with the demands of the job and attain well-being and a sense of balance between their working and personal lives.
The management of the hospital should reduce the length of the working hours and implement a fairer distribution of workload to assist the pediatricians to handle their work with less stress and safer work environments. Senior physicians should assist their juniors while dealing with critical patients to reduce their stress level among them. Hospital management should be appreciative and train medical staff.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

Ethical consideration:

Permission was approved by the Research Ethics Committee of Benghazi Pediatric Hospital (2026.1.2.ل.ع). On the days of data collection, the study's purpose was explained to the physicians involved in the study, and verbal consent to participate was obtained from each participant. Confidentiality of the information and anonymity were identified to assure honesty, and participants were asked to write no names or other personal information in the questionnaires. The questionnaires were filled out by the physicians themselves during their daily work hours.

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