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CORRELATES AND ASSOCIATED FACTORS OF STRESS, A CROSS-SECTIONAL ANALYSIS OF THE RELATION BETWEEN STRESS AND HUMAN HEALTH

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Ключові слова: *рівні стресу, булінг, кореляти стресу, взаємозв'язок між стресом і здоров'ям, стратегії подолання стресу, стрес у населення Мосула (Ірак)*

Abstract. Correlates and associated factors of stress, a cross-sectional analysis of the relation between stress and human health. Al-Sammak Najlaa Ibrahim, Khuder Hana Abdul-Qader, Jasim Shaymaa A.H. *Stress is one of the pervasive problems of modern life. It affects individuals everywhere in the world specifically the economically and politically unstable areas including Iraq. The daily-life stressors make people in such areas agonize high stress that affect their health adversely. Hence, this study aims to measure stress, its related health issues, and coping strategies for people in Mosul/ Northern Iraq. A cross-sectional survey was performed among 553 adults over a period of 4 months. The questionnaire form was applied depending on PSS 10 for stress measurement. Data involved socio-demographic, habitual, and health related information for each participant, in addition to their coping activities to overcome stress. Descriptive and analytic statistics were used including means, SD, F-test, Chi-square, Fisher-Exact tests, and Ordinal logistic regression analysis. It was found that, the vast majority (>85%) of participants suffered from moderate to high stress, more significantly among young, female, unmarried, students, with poor familial relationships, and bullying unprotected participants (p-value ranges 0.005-<0.001). They perceived their health as poor and complaining from fatigue, headache, anxiety, depression, sleep disturbances, and amnesia (p<0.001). All coping strategies were performed infrequently by participants, but the most operative methods that kept people under low stress were praying, meditation, taking rest, and temporarily distancing from stressful events as predicted by regression analysis (p-value ranges 0.041-0.002). So, this study reveals alarming levels of stress among residents of Mosul which adversely affecting their health and daily living. Activities that are predicted to lower stress involved praying, meditation, taking rest, and avoiding stressors.*

Реферат. Кореляти та пов'язані чинники стресу: перехресне дослідження взаємозв'язку між стресом і здоров'ям людини. Аль-Саммак Наджлаа Ібрагім, Худер Хана Абдул-Кадер, Джасім Шаймаа А. Х. *Стрес є однією з поширених проблем сучасного життя. Він впливає на людей у всьому світі, особливо в регіонах з економічною та політичною нестабільністю, зокрема в Іраку. Щоденні стресові чинники змушують мешканців таких районів переживати сильний стрес, що негативно позначається на їхньому здоров'ї. Відтак, метою цього дослідження було оцінити рівень стресу, пов'язані з ним проблеми зі здоров'ям та стратегії подолання стресу серед населення Мосула (Північний Ірак). Протягом чотирьох місяців було проведено перехресне опитування 553 дорослих осіб. Для вимірювання рівня стресу використовувалася шкала PSS-10. Зібрані дані включали соціально-демографічну інформацію, відомості про звички та стан здоров'я кожного учасника, а також інформацію про методи, які вони застосовували для подолання стресу. У роботі використовувалися методи описової та аналітичної статистики, зокрема розрахунок середніх значень і стандартного відхилення (SD), F-критерій, критерій хі-квадрат, точний критерій Фішера та порядкова логістична регресія. Встановлено, що переважна більшість*

(>85%) учасників страждала від стресу середнього або високого рівня; при цьому вищі показники стресу спостерігалися серед молоді, жінок, неодружених, студентів, а також осіб з незадовільними сімейними стосунками та тих, хто зазнавав цькування (булінгу) і не мав належного захисту (значення p у діапазоні 0,005-<0,001). Учасники оцінювали стан свого здоров'я як незадовільний, скаржачись на втому, головний біль, тривожність, депресію, порушення сну та проблеми з пам'яттю (p<0,001). Хоча учасники рідко вдавалися до стратегій подолання стресу, результати регресійного аналізу показали, що найефективнішими методами, які допомагали підтримувати низький рівень стресу, були молитва, медитація, відпочинок і тимчасове дистанціювання від стресових подій (значення p у діапазоні 0,041-0,002). Отже, дослідження виявило тривожно високий рівень стресу серед мешканців Мосула, що негативно впливає на їхнє здоров'я та повсякденне життя. До заходів, які, згідно з результатами аналізу, сприяють зниженню рівня стресу, належать молитва, медитація, відпочинок та уникнення стресових чинників.

Stress is an inevitable natural psychological and physiological response of the human body to internal and external threats or demands known as stressors [1, 2]. Exposure to acute problems can be overwhelmed effectively in form of adaptive human responses; however, repeated or prolonged stressors can threaten health and contribute to serious illnesses [3]. Stress can be influenced by various reasons including individual factors such as genetics, personality trait, and coping capabilities; environmental factors like socioeconomic status, life events, and workplace pressures; and social factors as social inequity and relationship difficulties [4, 5, 6]. Physiologically, chronic stressors promote the hypothalamic-pituitary-adrenal axis leading to sustainable release of the stress hormone 'cortisol' which can damage body systems on prolonged elevation [7].

The effects of stress on human health are ranged from short-term problems such as headache, fatigue, insomnia, and anxiety, to chronic serious conditions as cardiovascular diseases (CVDs), immune dysfunction, diabetes mellitus (DM), and psychological problems like post-traumatic distress syndrome (PTSD), depression, cognitive impairment, and reduced learning capabilities [8, 9, 10]. Additionally, stress affects negatively work performance and social relationships worsening life quality and hastening aging process [11, 12].

Stress releasing strategies deliver potential interventions that improve well-being in highly stressed environments. Among the governmental interventions that achieve decent standard living for all citizens are equal opportunities for education, health services, job provision, workplace interventions, socioeconomic improvement, and community-based supportive initiations [13, 14]. Other stress coping activities can be achieved at individual level such as physical activities, engaging in mindfulness rituals like praying and meditation, seeking social support, and experiencing healthy living as adequate nutrition and proper sleep [15, 16].

Stress is a part of our daily life, particularly in conflict-affected regions such as the Middle East, where political and economic instability exacerbate mental strain. Iraq, the central part of this region, was suffering for decades from different forms of wars, blockade, terrorism, and occupation that harvested hundred thousand of population's lives and destroyed the infrastructures. People in Mosul City, who agonized additionally ISIS occupation for more than three years, still suffered from the sequences of these events with high levels of stress, anxiety, and depression which are ultimately responsible for the uppermost levels of suicidal thoughts and attempts [17]. Most researches in Mosul focused on the psychological disorders without exhibiting stress and its related factors. Accordingly, this study aimed to demonstrate the extent to which population agonized stress, its correlates, associations with health problems, and the main valuable coping activities that mitigate stress and promote overall wellbeing.

MATERIALS AND METHODS OF RESEARCH

In accordance with the Declaration of Helsinki, the study was approved by the "Scientific Committee and Medical Research Ethics Committee in the College of Medicine/ University of Mosul" with the number: UOM/COM/MREC/24-25/DEC".

Research's objectives and benefits were explained to participants prior to data collection, and they were invited to share their data after obtaining their informed consents. Confidentiality and anonymity of participants' information were assured with emphasis on their ability to withdraw from the study without any consequences.

A cross-sectional study was performed among adult population in Mosul City/ Northern Iraq to examine the factors that are associated with stress and its coping strategies. The study involved adults of both sexes and from various socio-demographic and cultural backgrounds. Data were collected from public places such as markets, universities which involve in addition to colleges, restaurants, libraries, and book stores, their clients are mix of students, employers, and other people with various social, educational, and economic backgrounds who are representative to the general population of the city.

Study's participants involved adults that were chosen conveniently from colleges and public places

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over a period of 4 months starting from Sep. 2025 excluding people with severe mental problems. To calculate sample size, Cochrane formula was used: [n= ($Z^{\wedge 2}$ pq)/$d^{\wedge 2}$] [18]. The prevalence of stress in the city is unknown; so, we use p=50%. Consequently, the calculated sample was 384, but the total distributed questionnaire forms were 600 taken in consideration any missing data. So, the final sample was 553 with 92.2% completion rate.

Both direct interviews and self-administered information gathering were adopted for data collection depending on participants' preferences. The questionnaire form included detailed socio-demographic, habitual, and health status information about each participant to identify the relation between these factors and stress. It was validated by presenting research's protocol to the "Scientific Committee of Specialists in Family Medicine and Community Medicine in the College of Medicine", and gained reliability by test-retest pilot study on 50 participants with Cronbach's α =79% [18].

To measure stress level, the Arabic validated version of Perceived Stress Scales (PSS 10) was used due to its appropriateness to the study population. It involves 10 questions with 5 answers for each according to the 5-points Likert's scale: (never=0, rarely=1, sometimes=2, often=3, and always=4) [19]; so, the total scores were ranged between 0-40. Consequently, participants were divided into three groups depending on their answers: (low stress =0-13, moderate stress =14-26, and high stress =27-40) [19]. Comparisons between these three groups were performed to identify the association between various variables and stress symptom scores. Another group of questions involved data about the health problems as perceived by the study participants and their adopted activities to cope with and overcome stress.

Research's data were arranged in Excel sheet and then analysed by SPSS version 26 "IBM Corp., Chicago, USA; license number:

WHIQVZYWLARL9JEYQEGDUBLH8Z3ZCJ AL3FLXMS98V95TSDYI7FOEXUPRR".

Descriptive data were displayed as frequencies, percentages, means, and SD, in addition to calculating crowding index as (no. of persons/no. of rooms), and BMI (weight in kg/height in m^2). The Q-Q plots and histograms were used to assess the normal distribution of continuous variables.

Questions about strategies of overcoming stress involved 5 answers ranging from never=1 to always=5; thus, the preferable mean answer was ≥ 3, any mean answer <3 means infrequent performance of the coping activity by the study contributors.

The association between stress and human health was determined by comparing the variables among the three study groups using ANOVA analysis for means (as the variables are normally distributed), Chi-square and Fisher-Exact tests for categorial variables, and ordinal logistic regression for predictors, their significance level was <5% [18].

RESULTS AND DISCUSSION

Study participants were divided into three groups depending on their stress scale: low stress in 81 (14.7%), moderate stress in 386 (69.8%), and high stress in 86 (15.5%). It is obvious that the majority of people suffered from moderate to high stress symptom score.

The association between socio-demographic and habitual factors with stress

Among the sociodemographic factors that significantly associated with high stress are young age 18-25 years (p=0.001), female gender (p<0.001), unmarried status (p=0.005), students; having poor familial and social relationships; exposing to bullying (p<0.001 each), having mean crowding index of 1.65 (p=0.033), and mean BMI of 25.7 (p=0.022). Moreover, the relevant habitual factors include lack of physical exercise (p=0.001) and lack of smoking (p=0.007) as demonstrated in Table 1.

Stressors, whether positive or negative, have unavoidable mental and physical effects on human that is ranging from short-term problems to chronic diseases upon continuous exposure. Living in an area suffered from high levels of political and economic instability, as in Iraq, make people more vulnerable to chronic stress and its consequences. This study revealed that 85.3% of population in Mosul suffer from moderate to high levels of stress, mostly among students just similar to the finding of Ibrahim et al. [20] among students in Sudan as they live under the same circumstances as Iraqi people.

The most significant correlates of high stress were young age (p=0.001), female gender (p<0.001) "which was proved by regression analysis", unmarried status (p=0.005) reflecting the lack of social support, students (p<0.001) owing to learning's difficulties, poor familial and social relationships (p<0.001), bullying exposure (p<0.001), with mean crowding index of 1.65 (p=0.033), and mean BMI of 25.7 (p=0.022). In Bangladesh, comparable relations of psychological problems including stress were exhibited among university students especially those aged 21–23 years, female, unmarried, and having small family size [21], whereas the relation between normal BMI with stress may be confounded by the young age and student status of participants in the current study.

Lack of physical exercise (p=0.001) and lack of smoking (p=0.007) were the main habitual factors related to high stress. Committing physical activities has direct effect on mood enhancement and stress

cessation [22] and this was supported by regression analysis, but smoking was not proved by regression as relieving factor and may be confounded by the young age of participants. This relation was contradicted by Lawless et al. [23] but matched with a multinational study in 41 countries which revealed a positive relation between heavy smoking and high stress levels [24]. Both smoking and BMI vary considerably across age groups; therefore, the young age of participants may confound their observed relation with stress, and longitudinal studies are needed to clarify such relationship.

Table 1

The relation of socio-demographic and habitual factors with stress among study participants (n=553)

Socio-demographic and Habitual Factors	Stress level						*p*-value*
	low stress (n=81)		moderate stress (n=386)		high stress (n=86)		
	No.	%	No.	%	No.	%	
Age (years)							
18-25	24	29.6	109	28.2	44	51.2	0.001
26-40	25	30.9	136	35.3	23	26.7	
≥41	32	39.5	141	36.5	19	22.1	
Sex							
Male	42	51.9	122	31.6	11	12.8	<0.001
Female	39	48.1	264	68.4	75	87.2	
Residence							
Urban	75	92.6	373	96.6	80	93.0	0.111**
Rural	6	7.4	13	3.4	6	7.0	
Education level							
<University level	7	8.6	18	4.7	6	7.0	0.250**
University and higher education	74	91.4	368	95.3	80	93.0	
Marital status							
Single	33	40.7	155	40.2	51	59.3	0.005
Married/ Divorced/ Widowed	48	59.3	231	59.8	35	40.7	
Social class							
Low	1	1.2	5	1.3	1	1.2	0.095**
Middle	28	34.6	166	43.0	47	54.7	
High	52	64.2	215	55.7	38	44.1	
Job							
Student	22	27.2	99	25.6	44	51.1	<0.001
Employed	39	48.1	241	62.5	36	41.9	
Free jobs/ Retired‡	16	19.8	26	6.7	2	2.3	
Housewife	4	4.9	20	5.2	4	4.7	

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Table 1 (continued)

Socio-demographic and Habitual Factors	Stress level						*p*-value*
	low stress (n=81)		moderate stress (n=386)		high stress (n=86)		
	No.	%	No.	%	No.	%	
Housing							
Owned	71	87.7	340	88.1	73	84.9	0.719
Rented	10	12.3	46	11.9	13	15.1	
Family type							
Nuclear	69	85.2	326	84.5	68	79.1	0.439
Extended	12	14.8	60	15.5	18	20.9	
Poor familial and social relationships							
Never/ Rarely	52	64.2	107	27.7	33	38.4	<0.001
Sometimes	23	28.4	195	50.5	26	30.2	
Often/ always	6	7.4	84	21.8	27	31.4	
Exposure to bullying							
Never/ Rarely	44	54.3	95	24.6	18	20.9	<0.001
Sometimes	21	25.9	188	48.7	46	53.5	
Often/ always	16	19.8	103	26.7	22	25.6	
Exercise							
Never/ Rarely	37	45.6	233	60.3	61	70.9	0.001
Sometimes	22	27.2	103	26.7	18	20.9	
Often/ always	22	27.2	50	13.0	7	8.2	
Smoking							
Never/ Rarely	65	80.2	314	81.4	82	95.3	0.007**
Sometimes	2	2.5	19	4.9	0	0.0	
Often/ Always	14	17.3	53	13.7	4	4.7	
Sedative drugs' use							
Never/ Rarely	70	96.3	332	86.1	73	84.9	0.088**
Sometimes	2	2.5	38	9.8	8	9.3	
Often/ Always	1	1.2	16	4.1	5	5.8	
Mean crowding index	1.52±0.684		1.41±0.759		1.65±1.045		0.033***
Mean BMI (kg/m^2)	27.06±4.626		27.59±6.206		25.70±4.380		0.022***

Notes: *Chi-square test; **Fisher-Exact test; ***One-way ANOVA; Sig. level <0.05; ‡ Involving non-employers and retired people.

The association between chronic diseases and stress

Table 2 explores the association between chronic diseases and stress. It was found that more than one third (205/37.1%) of all participants had at least one chronic disease. Although highly stressed participants significantly perceived their health status as fair or poor ($p<0.001$); however, clarifying these diseases separately reveals non-significant differences among the three study groups.

The relation between chronic diseases and stress is complex and acting in a vicious circle as prolonged stress can lead to chronic diseases and vice versa. More than one third (37.1%) of all participants had one or more chronic diseases. Although no significant association was found between the presence of chronic diseases and stress levels, participants with high stress levels were significantly more likely to report poor health ($p<0.001$). A similar adverse effect of chronic diseases on population's psych, body, and social relationships has been demonstrated in Africa and other world places [25, 26].

Table 2

The relation between stress and chronic diseases among study participants (people with ≥1 chronic disease, n=205)

Chronic Diseases	Stress level						*p*-value*
	low stress (n=25)		moderate stress (n=148)		high stress (n=32)		
	No.	%	No.	%	No.	%	
Cardiovascular diseases	2	2.5	9	2.3	4	4.7	0.450**
Diabetes mellitus	7	8.6	24	6.2	3	3.5	0.387
Hypertension	6	7.4	33	8.5	4	4.7	0.470
Respiratory diseases	1	1.2	14	3.6	3	3.5	0.699**
Osteoarthritis	5	6.2	33	8.5	11	12.8	0.299
Renal problems	0	0.0	12	3.1	3	3.5	0.273**
GIT/ Peptic ulcer	1	1.2	17	4.4	7	8.1	0.105**
Migraine	3	3.7	38	9.8	6	7.0	0.166
Others (psychological/ disabilities)	3	3.7	43	11.1	14	16.3	0.030
Overall health status (participants' perception)							
Good	53	65.5	128	33.2	15	17.4	<0.001
Average	27	33.3	229	59.3	51	59.3	
Poor	1	1.2	29	7.5	20	23.3	

Notes: *Chi-square test; **Fisher-Exact test; Sig. level <0.05.

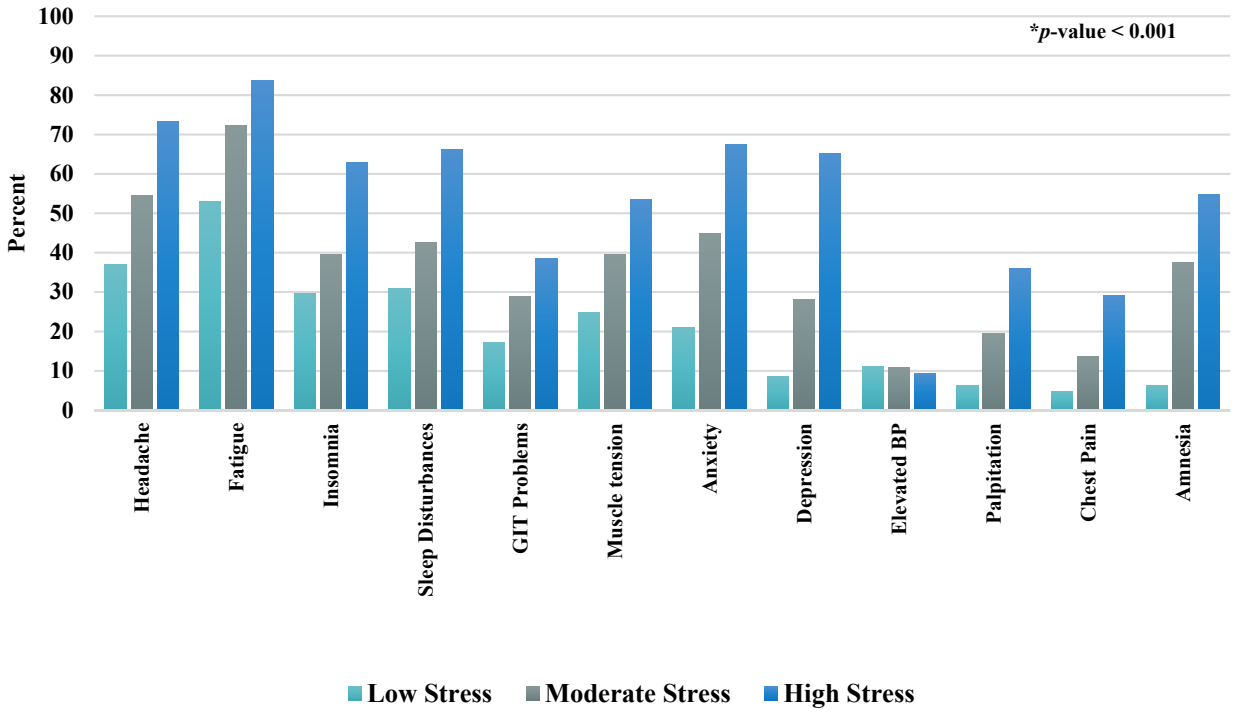
The association between stress and health

Of all participants, 534 (96.6%) claimed that they were complaining from one or more health problems in the last month prior to data collection. It is clear that, apart from elevated blood pressure, all health problems are perceived more prominently by the highly stressed people ($p<0.001$) as displayed in Figure. Mostly, they suffered from fatigue, headache, anxiety, depression, sleep disturbances, and amnesia.

It is evident that stress influences human health adversely. The vast majority of participants (96.6%) were complaining from one or more health issues regardless their stress level; however, all health problems, except elevated BP, were significantly more

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prominent in the highly stressed group (p<0.001) specifically fatigue, headache, anxiety, depression, sleep disturbances, and amnesia. Comparable results were explored by several studies globally in America, Europe, and Asia [27, 28, 29]. This is logical because stressors negatively affect immune system and cause elevation of stress hormones like cortisol all of which increasing health problems and complaints among highly stressed people.



*Chi-square test, Sig. level <0.05

The association between stress and health as perceived by study participants (n=534)

Strategies of overcoming stress and aggravating and relieving predictors of stress

Table 3 shows the main activities that were performed by the study participants to cope with stress. In general, all activities, apart from praying, were performed infrequently among most participants regardless their stress level. However, it is obvious that sleeping enough, eating balanced diet, and keeping isolated from stressful events are important factors to preserve people at lower stress symptom scores (means=3.11, 2.98, and 3.33 respectively). Alternatively, seeking social support and taking time off from work or study are significantly more prominent among highly stressed group (p=0.007 and 0.015 respectively), but they still under the desired level of overcoming stress.

Ordinal logistic regression of the variables associated with stress

Among all study variables, Table 4 exhibits the main predictors that are associated with stress whether in an aggravating or reliving manner. For demographic factors, females and those who have lacked exercise in their daily activities appear to be significantly more prone to have stress (p<0.001 and 0.018 respectively), the same for people suffering from psychological problems or disabilities (p=0.004). Moreover, the main significant coping strategies that are predicted to be effective in keeping people at lower stress levels are praying, meditation or relaxation, taking time off work or school to recharge, and keeping isolated from stressful events (p-value ranges 0.041-0.002).

While stress is an inevitable daily life event that may harmfully impact our psyche and body, coping activities ought to be part of our lifestyle to ameliorate stress and continue with a relatively healthy existence. Several approved strategies are present to overcome stress, most of them were adopted infrequently by study participants leading to imperceptible effect on stress reduction. Praying, meditation or relaxation, taking time off from work or study, and temporary distancing from stressful events appeared to be significant predictors of having lower stress levels.

Table 3

Activities performed by study participants to cope with and overcome stress (n=553)

Activities	Stress level			*p*-value*
	low stress (n=81)	moderate stress (n=386)	high stress (n=86)	
	mean±SD	mean±SD	mean±SD	
Engage in activities to manage stress (e.g. hobbies, socializing)	2.44±1.173	2.75±1.059	2.52±1.176	0.027
Seek social support from friends / family	2.19±1.174	2.56±1.026	2.66±1.123	0.007
Seek professional help e.g. therapy, counselling	1.47±0.760	1.65±0.889	1.49±0.917	0.115
Use sedatives / medications	1.26±0.738	1.41±0.779	1.48±0.891	0.178
Perform religious acts as praying	3.63±1.156	3.89±1.007	3.99±1.090	0.061
Practice mindfulness / meditation / or relaxation	1.94±1.053	1.95±0.963	1.80±1.206	0.459
Make recreational activities	2.51±1.038	2.80±0.967	2.51±1.234	0.009
Practice sports or other physical activities	2.28±1.143	2.21±1.048	1.90±1.096	0.028
Take time off work or school to recharge	2.09±0.990	2.45±1.019	2.49±1.361	0.015
Sleep enough	3.11±1.162	2.99±0.972	2.84±1.216	0.230
Eat balanced food	2.98±1.151	2.71±0.991	2.41±1.056	0.002
Temporary distancing from stressors	3.33±1.037	3.15±0.993	2.60±1.151	<0.001

Notes: * – one-way ANOVA; Sig. level <0.05; average score for each activity =3; <3 – poor score; ≥3 – good score.

Undoubtedly, praying and meditation have ameliorating effects on stress and its related health problems owed to released tension, enhanced mood, and improved sleep [30]. Equally, taking rest and avoiding stressors temporarily have tension releasing effects especially under unsettled life events [31, 32].

In general, the alarming levels of stress in the current study require targeted interventions by increasing population awareness toward utilizing mental health services without feeling shame and implementing mental health screening programs among attendees of primary health clinics.

Table 4

Ordinal logistic regression of different variables (demographic, chronic diseases, and coping strategies) and their association with stress

Variables	β	Adjusted OR	SE	*p*-value	95% CI for adjusted OR
Gender					
Male	-1.245	0.29	0.257	<0.001	0.17-0.48
Female (Ref.)	----	1.00	----	----	----
Exercise					
Never	0.704	2.02	0.297	0.018	1.13-3.61
Sometimes	0.437	1.55	0.320	0.172	0.83-2.90
Often (Ref.)	----	1.00	----	----	----

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Table 4 (continued)

Variables	β	Adjusted OR	SE	*p*-value	95% CI for adjusted OR
Chronic diseases (Psychological / disability)					
Absent	**-0.865**	**0.42**	**0.297**	**0.004**	**0.24-0.75**
Present (Ref.)	**----**	**1.00**	**----**	**----**	**----**
Coping strategies:					
Perform religious acts as praying					
Never	**-1.204**	**0.30**	**0.656**	**0.066**	**0.08-1.09**
Rarely	**-1.004**	**0.37**	**0.408**	**0.014**	**0.16-0.82**
Sometimes	**-0.592**	**0.55**	**0.290**	**0.041**	**0.31-0.98**
Often	**-0.691**	**0.50**	**0.254**	**0.007**	**0.30-0.82**
Always (Ref.)	**----**	**1.00**	**----**	**----**	**----**
Practice mindfulness / meditation / or relaxation					
Never	**-2.069**	**0.13**	**0.816**	**0.011**	**0.03-0.62**
Rarely	**-2.544**	**0.08**	**0.837**	**0.002**	**0.02-0.40**
Sometimes	**-2.413**	**0.09**	**0.838**	**0.004**	**0.02-0.46**
Often	**-2.562**	**0.08**	**0.894**	**0.004**	**0.01-0.45**
Always (Ref.)	**----**	**1.00**	**----**	**----**	**----**
Take time off work or school to recharge					
Never	**-1.740**	**0.18**	**0.557**	**0.002**	**0.06-0.52**
Rarely	**-1.625**	**0.20**	**0.561**	**0.004**	**0.07-0.59**
Sometimes	**-1.508**	**0.22**	**0.557**	**0.007**	**0.07-0.66**
Often	**-0.929**	**0.39**	**0.594**	**0.118**	**0.12-1.26**
Always (Ref.)	**----**	**1.00**	**----**	**----**	**----**
Temporary distancing from stressors					
Never	**1.640**	**5.16**	**0.563**	**0.004**	**1.71-15.55**
Rarely	**1.134**	**3.11**	**0.469**	**0.016**	**1.24-7.79**
Sometimes	**0.249**	**1.28**	**0.434**	**0.567**	**0.55-3.00**
Often	**-0.072**	**0.93**	**0.433**	**0.868**	**0.40-2.17**
Always (Ref.)	**----**	**1.00**	**----**	**----**	**----**

Notes: β= regression coefficient; SE= standard error; OR= odds ratio; CI= confidence interval, Ref.= reference category, Sig. level <0.05.

Limitations of the study. Among the most important limitations was the convenience sampling technique that may affect the generalizability of results, this was overcome to some extent by involving larger number of participants than estimated. Additionally, the cross-sectional design can't identify causality and temporal relationship for the underlying health problem and coping strategies; accordingly,

future longitudinal studies are recommended for accurate estimation of such relationships.

CONCLUSIONS

1. Stress affects most people in Mosul especially the young, unmarried, female, students, with poor social relationships, and bullying unprotected participants.
2. Highly stressed people perceived their health as poor and complained frequently from fatigue, headache, anxiety, depression, sleep disturbances, and amnesia.
3. Helpful activities that were declared by people to lower stress involved praying, meditation or relaxation, taking rest, and avoiding stressors. Addressing these issues aids in tailoring targeted health interventions with broadening mental health awareness and services among population.

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