

Psychological Stress-related Angina Pectoris among Adult Patients in Kirkuk City (Comparative study)

الضغوطات النفسية المتعلقة بالذبحة الصدرية لدى المرضى البالغين في مدينة كركوك (دراسة
مقارنة)

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الخلاصة:

الهدف: تهدف الدراسة الحالية الى تقييم الضغوطات النفسية المتعلقة بالذبحة الصدرية لدى المرضى البالغين وإيجاد العلاقة بين الضغوطات النفسية والعمر، الحالة الزوجية، المستوى التعليمي، الوظيفة، الحالة الاقتصادية ومؤشر كتلة الجسم.

المنهجية: دراسة مقارنة (وصفية) اختيرت عينة ملائمة (غير احتمالية) تمثلت ب (٥٠) من المرضى الرجال و (٥٠) من المرضى النساء من مستشفيات مدينة كركوك (مستشفى نازادي التعليمي و مستشفى كركوك العام) والتي اختيرت العينات من وحدة الإنعاش القلبي ومن ردهة الباطنية والمشخصين بالذبحة الصدرية وللفترة من الأول من شهر أيار ٢٠١٤ ولغاية الأول من شهر كانون الثاني ٢٠١٥، ولتحقيق أهداف البحث صممت استمارة استبيانها تكونت من ثلاثة أجزاء: المعلومات الديموغرافية، المعلومات الطبية، ومقياس الضغوطات النفسية والذي تضمن (٢٤) فقرة. وبطريقة المقابلة الشخصية مع عينة البحث جمعت المعلومات وتم تحليل البيانات باستخدام أسلوب التحليل الوصفي (التكرارات، النسبة المئوية) وكذلك أسلوب التحليل الاستنتاجي (الاختبار التائي و تحليل التباين).

النتائج: من خلال تحليل البيانات تبين أن (28%) من الرجال كانوا ضمن الفئة العمرية (50-59) سنة و (32%) ضمن الفئة العمرية (40-49) سنة، (20%) من الرجال خريج ابتدائية بينما (42%) من النساء خريجات معهد، (36%) من الرجال و (46%) من النساء لديهم أطفال (1-3)، (38%) من الرجال موظفين و (50%) من النساء موظفات، (70%) من الرجال و (58%) من النساء في حالة اقتصادية متوسطة، و غالبيتهم كانوا من سكنة المدينة. وبالنسبة للمعلومات الطبية وجدت أن (38%) من النساء والرجال لم يكن لديهم أمراض مزمنة، (58%) من الرجال و (82%) من النساء لا يدخنون، (42%) من الرجال و (38%) من النساء أوزانهم فوق الطبيعية.

الاستنتاج: وجدت الدراسة الحالية بوجود علاقة بين جنس المريض ومستوى الضغط النفسي، ومعظم المرضى يعانون من الضغوطات النفسية ذات الشدة المتوسطة، وبالنسبة للمقارنة بين مرضى الرجال والنساء أظهرت أن هناك علاقة بين الضغوطات النفسية والعمر، بينما وجدت فقط في المرضى النساء أن هناك فرق بين الضغط النفسي (مستوى التعليمي، الوظيفة ومؤشر كتلة الجسم).

التوصيات: توصي الدراسة بالاهتمام بالجانب النفسي وذلك بإقامة البرامج التعليمية عن طريق الوسائل الإعلامية لزيادة المعرفة عند الناس حول المسببات، العلامات والأعراض، المضاعفات وعلاج التوتر والإجهاد وكيفية التكيف مع الضغوطات النفسية لتلاقي أمراض القلب وأمراض أخرى ناتجة من القلق والإجهاد النفسي.

Abstract:

Objective: The purpose of this study was to assess the psychological stress-related angina pectoris among adult patients (male and female) and find out relationship between patients' stress and some socio-demographic characteristics such as age, marital status, level of education, occupation, socioeconomic status and BMI.

Methodology: A comparative (descriptive) study was carried out at two hospitals (Kirkuk general and Azadi teaching) in CCU and medical ward in Kirkuk city for a period from the 1st of May 2014 and up to the 1st of January, 2015. A non-probability (Convenience) sample of (50 male) and (50 female) definitely diagnosed angina pectoris patient. To achieve the objectives of the study a constructed questionnaire conducted for the purpose of the study, which consisted of three parts: the demographic characteristics; medical data and assessment of stress which includes (24) items. The data were collected through the use of the interview. They were analyzed through the application of descriptive statistical analysis (Frequency, Percentage%) and inferential statistical (T. Test and ANOVA) data analysis.

Results: The majority of the study sample were male aged (50-59) years while, the female aged (40-49) years old. 90% of the male and (62%) of the female were married. The majority (20%) of the male was graduated from primary school, while (42%) of female were graduated from the institute. Both male (36%) and female (46%) had (1-3) child. Most of the study sample was employed, had moderate socioeconomic status and mostly from urban residency. Regarding to the medical data, finding of the study indicated that (38%) of them were no history of chronic disease. 58% of the male and (82%) of the female were no smoking. Majority (42%) of the male and (38%) of females was overweight.

Conclusions: the study was detected as a gender difference between male and female with psychological stress. In the study sample were found a significant relationship between psychological stress between male and female and ages. As the study concluded that most of the study sample were to have moderate psychological stress. Also founds a significant relationship only in female patients with angina and level of education, occupation, BMI and psychological stress.

Recommendations: Routine screening patients who attending to the hospital and primary health care center, for psychosocial vulnerability, current feelings and state of stress, with the use of reliable and valid measures.

Keywords: Psychological Stress, Angina pectoris, CCU, Medical Ward, BMI.

INTRODUCTION:

Stress constitutes a potential threat to health and adjustment cause many serious physical complaints among human beings due to its direct effect on body's biological systems such as the nervous system, digestive system, respiratory system, and cardiovascular system. There are different views regarding the impact of stress on cardiovascular disorders. Clinical data indicate that people with stress report higher levels of angina pectoris, and heart attack due to persistent stressful situations. A little bit of stress, known as "acute stress," can be exciting—it keeps people active and alert. But long-term, or "chronic stress," can have detrimental effects on health⁽¹⁾. A stressful event can trigger the "fight-or-flight" response, causing hormones such as adrenaline and cortisol to surge through the body. Angina usually is a symptom of coronary heart disease (CHD), also called coronary artery disease. Coronary heart disease (CHD) is the leading cause of death in the United States for men and women⁽²⁾. Cardiovascular disease (CVD, comprising coronary heart disease (CHD), stroke and peripheral vascular disease) is the leading cause of death worldwide. One in 2 men and 1 in 3 women will experience a coronary heart disease (CHD) event during their lifetime, with substantial implications for the population burden of disease, health-care system resources and the economy⁽³⁾. Stress is often defined as a mismatch between the demands placed on the individual and the way of coping with these demands. It can have a positive and a negative effect⁽⁴⁾. There is growing evidence that psychosocial stress can influence the natural history of coronary heart disease. The incidence of heart attacks and sudden death have been shown to increase significantly following the acute stress of natural disasters like hurricanes, earthquakes^(5,6).

Epidemiological studies indicate that psychosocial factors, both contribute to the development of coronary artery disease (CAD), and increase risk of cardiac dysfunction and the likelihood of cardiac events in susceptible patients with established disease⁽⁷⁾. Coronary heart disease is also much more common in individuals subjected to chronic stress⁽⁸⁾. Stress can cause a heart attack, sudden cardiac death, heart failure, or arrhythmias (abnormal heart rhythms) in persons who may not even know they have heart disease. Stress may affect the heart by; Increasing blood pressure, Increasing bad cholesterol, Affecting the blood clotting system by making blood clot and thicken easier, Increasing the levels of stress hormones in the body (cortisol & adrenaline), Higher obesity levels⁽⁹⁾. Most current definition states that stress is the mental and physical response and adaptation by our bodies to the real or perceived changes and challenges in our lives⁽¹⁰⁾. Stress can be associated with most daily activities, In contrast, distress, or negative stress, is caused by events that result in debilitating tension and strain, such as constantly feel pressurized or traumatized by too many demands, they come from our work or being unemployed, relationships, deadlines, financial problems, illness and death of a loved one and so on⁽¹¹⁾. Excessive physical exertion and emotional stress may cause problems in both men and women at all levels in an organization, but women report the highest levels of stress seem to be particularly susceptible to developing heart problems in the face of emotional stress. Angina usually occurs during exertion, severe emotional stress, during these periods the heart muscle demands more blood oxygen than the narrowed coronary arteries can deliver⁽¹²⁾. The primary purpose of this study was to assess the psychological stress-related aspects on angina pectoris among adult patients (male and female) and find out relationship between patients stress and some socio-demographical characteristics such as age, marital status, level of education, occupation, socioeconomic status and BMI.

MATERIALS AND METHODS

Design of the Study: A comparative (descriptive) study design was carried from the period 1st of May 2014 and up to the 1st of January , 2015 in order to achieve the objectives of the present study.

Setting of the Study: The data were collected from CCU and medical ward at (Kirkuk general and Azadi teaching) hospitals in Kirkuk city

Sample of The Study: A non-probability (convenience) sample consists of (50) males and (50) females patients, Patients who definitely diagnosed with any type of angina pectoris, and were excluded from the study if they:

- Unconscious patient, Unstable patient., Age less than 20 years.

The instrument of the study: The questionnaires consisted three parts:

- Demographic data sheet, consisted of 8 items with included: age, gender, marital status, level of education, number of children, occupation, socioeconomic status, and residence.
- The specific tool used to assess patients stress that consisted of (24). These items are measured on 2 levels of Likert scale ,Yes (2) and No (1). The cut - off point of mean of score of all items was (1.5), the interview took approximately (10 -15) minutes with patient.

RESULTS:

Table (1): Distribution of the Study Sample According to the Demographical Characteristics:

Socio-demographical data		Male		Female	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Age	20-29 year	3	6	3	6
	30-39 year	5	10	8	16
	40-49 year	11	22	16	32
	50-59 year	14	28	15	30
	60-69 year	12	24	5	10
	70-79 year	5	10	3	6
Total		50	100	50	100
		Mean of age (male) $\pm$ SD = 3.86 $\pm$ 1.355		Mean of age (female) $\pm$ SD = 3.40 $\pm$ 1.229	
Gender		50	100	50	100
Total		50	100	50	100
Marital status	Single	3	6	6	12
	Married	45	90	31	62
	Divorce	1	2	3	6
	Widow	1	2	10	20
Total		50	100	50	100
Level of Education	Not read & not write	9	18	9	18
	Read & Write	6	12	5	10
	Primary School	10	20	6	12
	Intermediate School	5	10	3	6
	Secondary School	7	14	5	10
	Institute	6	12	21	42
	College & above	7	14	1	2
Total		50	100	50	100
Number of children	No children	3	6	4	8
	1-3	18	36	23	46
	4-6	16	32	12	24
	7 and above	13	26	11	22

Total		50	100	50	100
Occupation	Employed	19	38	25	50
	Housewife	-	-	22	44
	Free work	8	16	-	-
	Jobless	8	16	-	-
	Retired	15	30	3	6
Total		50	100	50	100
Socio-economic status	Low	7	14	13	26
	Moderate	35	70	29	58
	High	8	16	8	16
Total		50	100	50	100
Residence	Urban	45	90	42	84
	Rural	5	10	8	16
Total		50	100	50	100

. Data analysis: Data was submitted to statistical analysis, which includes the descriptive data analysis (frequencies, percentages, mean of scores (M.S), inferential data analysis approach (ANOVA and T. Test)

The table(1) indicates that the majority of the study sample were male aged (50-59) years, while the female aged (40-49) years old. 90% of the male were married and (62%) of the female were married. The majority (20%) of the male was graduated from primary school, while (42%) of female were graduated from the institute. Both male (36%) and female (46%) had (1-3) child. Most of the study sample was employed, had moderate socioeconomic status and mostly from urban residency.

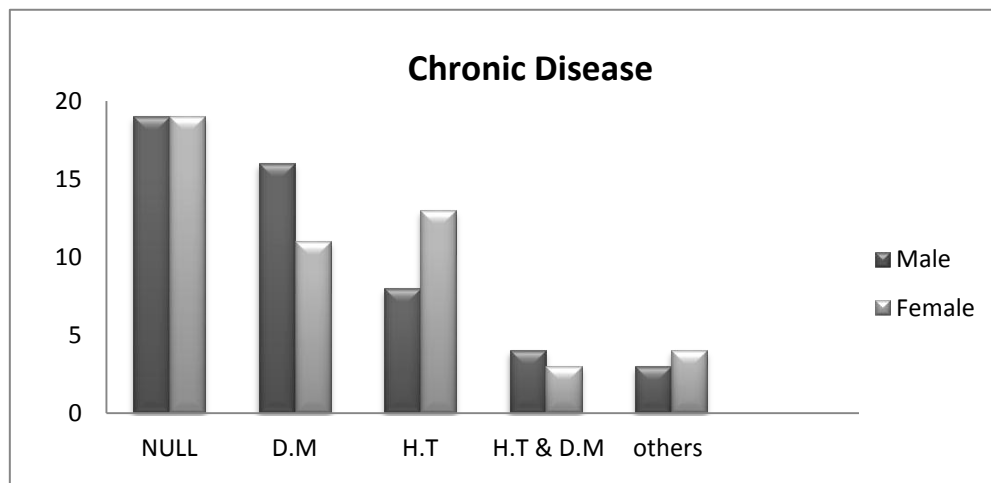


Figure (1) Distribution of chronic disease classified as Null ,DM, HT , mixed HT & DM and others chronic disease in the whole study.

Figure (1) Shows that the highest frequency and percentage 19 (38%) were null chronic disease.

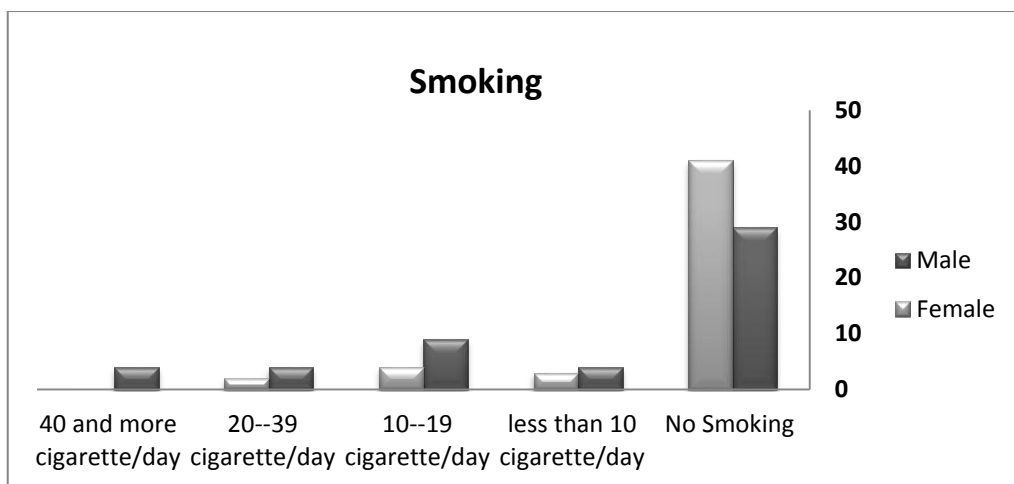


Figure (2) Distribution of Smoking in the whole study sample

Figure (2) shows that (58%) of male and (82%) of female were no smoker.

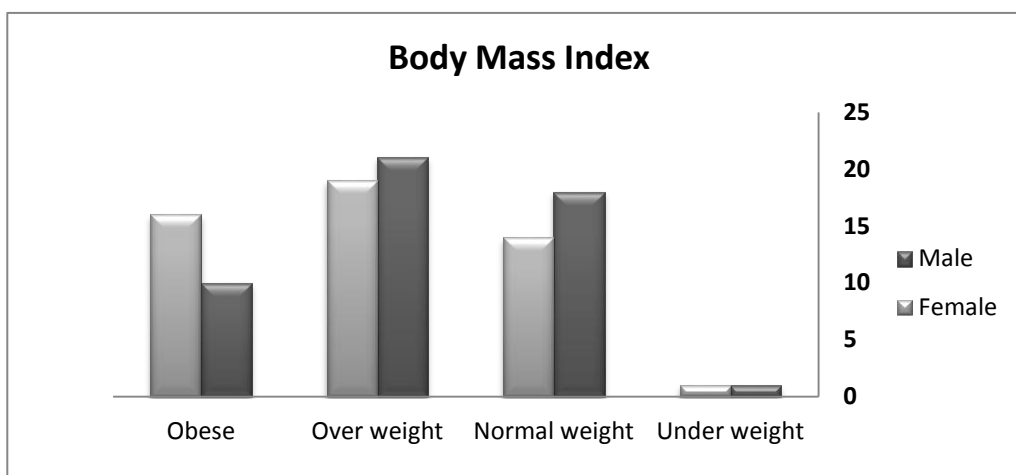


Figure (3) Distribution of BMI in the whole study through frequency and percentage

Figure (3) shows that the highest percentage of the sample was Overweight, 21 (42%) were male and 19 (38%) were female.

Table (2) Assessment of psychological distress among patients with angina pectoris (male & female) frequency, percentage & mean of score:

NO.	Items	Male		M.S	S	Female		M.S	S
		Yes F (%)	No F (%)			Yes F (%)	No F (%)		
1.	I frequently bring work home at night	17(34)	33(66)	1.34	M	2(4)	48 (96)	1.04	L
2.	Not enough hours in the day to do all the things that I must do	29(58)	21(42)	1.58	M	21(42)	29(58)	1.42	M
3.	I deny or ignore problems in the hope that they will go away	34(68)	16(32)	1.68	M	35(70)	15(30)	1.7	M
4.	I do the jobs myself to ensure they are done properly	38(76)	12(24)	1.76	H	47(94)	3(6)	1.94	H
5.	I underestimate how long it takes to do things	30(60)	20(40)	1.6	M	26(52)	24(48)	1.52	M

6.	I feel that there are too many deadlines in my work.	36(72)	14(28)	1.72	M	19(38)	31(62)	1.38	M
7.	My self-confidence / self-esteem is lower than I would like it to be	10(20)	40(80)	1.2	L	28(56)	22(44)	1.56	M
8.	I frequently have guilty feelings if I relax and do nothing	26(52)	24(48)	1.52	M	4(8)	46(92)	1.08	L
9.	I find myself thinking about problems even when I am supposed to be relaxing	29(58)	21(42)	1.58	M	16(32)	34(63)	1.32	M
10.	I feel fatigued or tired even when I wake after an adequate sleep	42(84)	8(16)	1.84	H	33(66)	17(34)	1.66	M
11.	I often nod or finish other peoples sentences for them when they speak slowly	34(68)	16(32)	1.68	M	35(70)	15(30)	1.7	M
12.	I have a tendency to eat, talk, walk and drive quickly	32(64)	18(36)	1.64	M	27(54)	23(46)	1.54	M
13.	My appetite has changed, have either a desire to binge or have a loss of appetite / may skip meals	26(52)	24(48)	1.52	M	35(70)	15(30)	1.7	M
14.	I feel irritated or angry if the car or traffic in front seems to be going too slowly/ I become very frustrated	41(82)	9(18)	1.82	H	17(34)	33(66)	1.34	M
15.	If something or someone really annoys me I will bottle up my feelings	29(58)	21(42)	1.58	M	35(70)	15(30)	1.7	M
16.	When I play sport or games, I really try to win whoever I play	31(62)	19(38)	1.62	M	41(82)	9(18)	1.82	H
17.	I experience mood swings, difficulty making decisions, concentration and memory is impaired	34(68)	16(32)	1.68	M	35(70)	15(30)	1.7	M
18.	I find fault and criticize others rather than praising, even if it is deserved	23(46)	27(54)	1.46	M	27(54)	23(46)	1.54	M
19.	I seem to be listening even though I am preoccupied with my own thoughts	19(38)	31(62)	1.38	M	13(26)	37(74)	1.26	M
20.	I find myself grinding my teeth	12(24)	38(76)	1.24	L	22(44)	28(56)	1.44	M
21.	Increase in muscular aches and pains, especially in the neck, head, lower back, shoulders	42(84)	8(16)	1.84	H	10(20)	40(80)	1.2	L
22.	I am unable to perform tasks as well as I used to, my judgment is clouded or not as good as it was	27(54)	23(46)	1.54	M	44(88)	6(12)	1.88	H
23.	I find I have a greater dependency on caffeine, nicotine or drugs	10(20)	40(80)	1.2	L	20(40)	30(60)	1.4	M
24.	I find that I don't have time for many interests / hobbies outside of work	25(50)	25(50)	1.5	M	1(2)	49(98)	1.02	L

F= Frequencies, % = Percentage, MS= Mean of Score, H=High, M=Middle, L=Low

Regarding to male patients the table (2) shows the four items with the highest rating were (I do the jobs myself to ensure they are done properly) (1.76), (I feel fatigued or tired even when I wake after an adequate sleep) (1.84), (I feel irritated or angry if the car or traffic in front seems to be going too slowly/ I become very frustrated) (1.82), (Increase in muscular aches and pains especially in the neck, head, lower back, shoulders) (1.84).

In relation to Female patients also the table (2) shows the three items with the highest rating were (I do the jobs myself to ensure they are done properly) (1.76), (When I play sport or games, I really try to win whoever I play) (1.82), (I am unable to perform tasks as well as I used to, my judgment is clouded or not as good as it was) (1.88).

Table (3): Distribution of level of stress among male & female patient with angina pectoris.

No.	Level of stress	Male		Female	
		F	%	F	%
1.	High	3	12.5	3	12.5
2.	Middle	16	66.7	13	54.2
3.	Low	5	20.8	8	33.3
Total		24	100	24	100

F= Frequencies , % = Percentage.

Table (3) shows that the highest level of stress was middle represented (Male 66.7% , Female 54.2%), and Low level of stress represented (Male 20.8%, Female 33.3), and (12.5%) was same high level of stress in male and female patient with angina pectoris.

Table (4) Comparison of the psychological stress among male & female patients with angina pectoris regarding to residence.

Items	Gender	Residence	T. Test			T.Obs	P. Value ≤ 0.05
			No.	X	S.D		
Stress	Male	Urban	45	37.51	3.559	0.055	N.S
		Rural	5	37.60	1.517		
	Female	Urban	42	36.19	2.482	1.954	N.S
		Rural	8	34.25	3.059		
D.F= 48							

No.=Number, X=Mean,SD=standard deviation, Obs.=Observation,P=probability, D.F= Degree of Freedom, NS= No significant.

Table(4) shows that there is no significant association between psychological stress among male & female patients with angina pectoris regarding to residence at **P. Value $\leq$ 0.05.**

Table (5) Comparison of the psychological stress among male & female patients with angina pectoris regarding to some socio-demographical characteristics.

Age							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	180.801	121.630	36.160	24.326	0.004 S.	0.001 S.
	Within Groups	385.679	221.650	8.765	5.038		
	Total	566.480	343.280				

DF= 49

DF - 49

Marital status							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	29.680	26.941	9.893	8.980	0.475 N.S	0.284 N.S
	Within Groups	536.800	316.399	11.670	6.877		
	Total	566.480	343.280				

DF= 49

Level of education							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	68.178	88.828	11.363	14.805	0.450 N.S	0.036 S.
	Within Groups	498.302	254.452	11.588	5.917		
	Total	566.480	343.280				

DF= 49

Occupation							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	82.270	45.201	27.423	22.605	0.063 N.S	0.036 S.
	Within Groups	484.210	298.070	10.526	6.342		
	Total	566.480	343.280				

DF= 49

Socioeconomic status							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	10.605	10.097	5.302	5.049	0.641 N.S	0.496 N.S
	Within Groups	555.875	333.183	11.827	7.089		
	Total	566.480	343.280				

DF= 49

Body Mass Index							
Items	S.O.V	S.S		M.S		F.Obs	
		Male	Female	Male	Female	Male	Female
Stress	Between Groups	9.897	63.368	3.299	21.123	0.845 N.S	0.023 S.
	Within Groups	556.583	279.912	12.100	6.085		
	Total	566.480	343.280				

DF= 49

SOV=Source of Variance, SS= Sum of Squares, MS=Mean of Score, F. Obs= Fisher Observation, DF= Degree of Freedom, S = Significant, NS= No Significant.

The table(5) shows that there was a significant difference between the study sample with angina pectoris between stress and their age, while there was a significant difference between stress and level of education, occupation, and body mass index only in female patients at **P. Value ≤ 0.05**.

DISCUSSION:

Atherosclerotic cardiovascular disease (CVD) is a chronic disorder developing insidiously throughout life and usually progressing to an advanced stage by the time symptoms occur. It remains the major cause of premature death in Europe⁽¹³⁾. CVD is strongly connected to lifestyle, especially the use of tobacco, unhealthy diet habits, physical inactivity, and psychosocial stress. Up to 50% of deaths from coronary disease are sudden and occur outside hospital (Callans, 2004). In a significant proportion of these deaths, greater in younger people, there is no previous history of heart disease, so the deaths are sudden and unexpected (Bowker et al, 2003). With increasing age, a greater proportion of coronary deaths occur in those who are known to

have had a heart attack previously, or in those who suffer from and have been treated for the chronic symptoms of angina pectoris, or of heart failure^(14,15).

A descriptive study conducted to examine the relationship between general measures of chronic life stress and atherosclerosis among middle aged adults without clinical cardiovascular disease via pathways through unhealthy lifestyle characteristics. The sample size was 5773 aged between 45-84. This results in significant indirect pathways between chronic life stress and Coronary artery calcification through smoking, and sedentary lifestyle and caloric intake through obesity were found. This study suggests that life stress is related to atherosclerosis once paths of unhealthy coping behavior are considered⁽¹⁶⁾.

Throughout the course of data analysis with regard to socio-demographic characteristic indicates that The majority of the study sample were male aged (50-59) years while, the female aged (40-49) years old. This finding comes along with the results obtained from a study done by (Ilali, and Taraghi, 2010) which indicated that the majority of the study subjects with IHD were (61-71) years old⁽¹⁷⁾. Regarding marital status most of the study were whereas the single, separating, divorcing, and widowing take the lowest percentage in the study. This finding was supported by results obtained from a study done by (Nateghian, 2008) which indicated that most of the participates with IHD were married⁽¹⁸⁾. Relative to the educational level larger group of the study group was graduated from Institutes or above. This finding disagrees with results obtain from other studies done by (Anima, et al. , 2005) which indicated that the majority of their study sample have low levels of education⁽¹⁹⁾.

Concerning socioeconomic status, middle socioeconomic status was larger group in study, which means that the middle socioeconomic status also play role in occurrence of IHD and this result is disagree with the results obtained from study done by (Zhijie, et al.) which indicated that the patients with low socioeconomic status tended to have higher levels of IHD risk factors⁽²⁰⁾. In regard to Occupation most of the study were employed whereas the Housewife, Free work, Jobless, and Retired take the lowest percentage in study. A more recent study of job strain strongly associated it with heart disease in a large sample of men, again independent of other CVD risk factors, however heart disease here was self-reported⁽²¹⁾. The relationship, however, was also evident in a sample of men who survived a clinically diagnosed CVD event⁽²²⁾. The (Lee, et al. 2002) found no evidenceto causally associate job strain with theemerging incidence of CVD in a sampleof women over four years⁽²³⁾. By contrast, (Kivimaki, et al. 2005) found bothjob strain and effort/reward imbalance to significantly predict risk of CVD mortality over 25 years⁽²⁴⁾. High demand and low decision latitude also predicted the incidence of CVD over an 11-year follow-up (Kuper and Marmot, 2003)⁽²⁵⁾, and in women, job strain have been linked to progression of coronary atherosclerosis over a 3-year period⁽²⁶⁾. The result shows that statistic reported a moderately significant difference at P. Value<0.05 throughout the distribution of the observed frequencies compared with their expected, which indicating that a meaningful cause's correlation ship had been presented in that distribution would be. These results agree with result obtain from a study done by (Roohafza, et al. 2010) which indicated that the odds ratios for stressful life events which gender events was associated with IHD⁽²⁷⁾. The result of the present study was suitable with the resultsof other studies which showed that stressful life events were very important risk factors for IHD with a statistically significant level at P. Value<0.01^(28,29).

These findings suggest that IHD patients who have moderate levels of mental stress may experience adverse physiological effects that may, in part, explain their age. Furthermore, behavioral factors that are both associated with moderate stress and age. Although stress is associated with other manifestations of psychological distress, this study demonstrates that an increased moderate stress level at the time of an IHD is independently associated with increased mortality and worse health status. Furthermore, there has been recent attention given to the

adverse impact of other psychosocial factors, such as anger, anxiety, and social support on mortality⁽³⁰⁾.and health status⁽³¹⁾.patients with coronary artery disease.

Although the psychological concepts of stress, anxiety, depression, anger, and hostility are not interchangeable, there is overlap among these concepts, and it is unclear how much of the stress captures psychological distress due to these factors that are related to but distinct from chronic stress. Expanding psychosocial interventions to address factors such as chronic stress, coping skills, anxiety⁽³²⁾. and other psychosocial impairments may improve IHD outcomes in vulnerable patients.

CONCLUSION:

- 1) The study was detected as a gender difference between male and female with psychological stress. In the study sample were found a significant relationship between psychological stress between male and female and their ages.
- 2) As the study concluded that most of the study sample were to have moderate psychological stress. Also founds a significant relationship only in female patients with angina and level of education, occupation, BMI and psychological stress.
- 3) The majority of study sample patients are employed and have a moderate socioeconomic status.

RECOMMENDATIONS:

1. Routine screening patients who attending to the hospital and primary health care center, for psychosocial vulnerability, current feelings and state of stress, with the use of reliable and valid measures.
2. Educational programs should be designed to increase peoples knowledge about the etiology, signs and symptom, complication and treatment of stress and providing scientific booklet, publication and journal about stress.
3. In addition, it will be important to examine whether interventions targeting chronic stress levels and coping skills in ischemic heart disease populations may attenuate the increased morbidity and mortality risk of increased stress.
4. Finally, recommended constructing special center to deal with the stresses patient.

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