

Determination of Anxiety Level in Patients with Ischemic Heart Disease at Misan Center for the Cardiac Diseases and Surgery in Al-Amarh City

تحديد مستوى القلق لدى المرضى المصابين بنقص التروية القلبية في مركز ميسان لأمراض وجراحة القلب في مدينة العمارة

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الخلاصة:

الهدف: تحديد مستوى القلق لدى المرضى المصابين بنقص التروية القلبية، ومعرفة تأثير السمات الديموغرافية والاجتماعية والخصائص السريرية على مستوى القلق.

منهجية البحث: أجريت دراسة وصفية في مركز ميسان لأمراض وجراحة القلب في مدينة العمارة للفترة من 20 تشرين الثاني 2015 لغاية 25 أيار 2016. تم فيها اختيار عينة عشوائية تكونت من (123) مريض ومريضة يعانون من مرض نقص التروية القلبية. جمعت البيانات بأسلوب تقنية المقابلة بعد تطوير استمارة الاستبيان من قبل الباحث، والتي تكونت من ثلاثة أجزاء: الجزء الأول يحتوي على السمات الديموغرافية والاجتماعية والجزء الثاني يشمل الخصائص السريرية أما الجزء الثالث فيختص بقياس مستوى القلق للمرضى من خلال مقياس زنك لقياس القلق النفسي والمتضمن (20) سؤال، صُنفت الدراسة مستويات القلق إلى: مستوى طبيعي من القلق (20-44)، مستوى متوسط من القلق (45-59)، مستوى عالي من القلق (60-74)، ومستوى من القلق المرضي (75-80). وتم استخدام (الإحصاء الوصفي) التكرارات والنسب المئوية والوسط الحسابي (والإحصاء الاستدلالي) الانحدار المتعدد، تحليل التباين واختبار-تي، وذلك لإيجاد الاختلافات بين متغيرات الدراسة ومستوى القلق.

النتائج: أظهرت نتائج الدراسة أن الغالبية العظمى من المرضى المصابين بنقص التروية القلبية في عينة الدراسة كان لديهم مستوى عالي من القلق (74-60) بنسبة (58.5 %). وأشارت إلى وجود فروق معنوية إحصائية بين متغيرات الدراسة مع مستوى القلق.

الاستنتاج: استنتجت الدراسة بأن متغيري (العمر وطول فترة المرض) يؤثران على مستوى القلق بصورة عكسية فكلما تقدم عمر المريض قل مستوى القلق لديه. وكلما يقل زمن فترة الإصابة بالمرض يزداد مستوى القلق.

التوصيات: أوصت الدراسة بتطوير وتطبيق الاستراتيجيات الفعالة في مجال التمريض لتقليل مستوى القلق من خلال إتباع أنماط الحياة الصحية والنشاط البدني مثلاً (تمارين استرخاء، تنفس عميق، الاستحمام والاسترخاء العضلي) اعتماداً على معرفة مستوى القلق لإعداد التدابير التمريضية الفعالة والمناسبة لمرضى نقص التروية القلبية.

Abstract:

Objective: To determine of anxiety level in patients with ischemic heart disease, and determine the association between socio-demographic characteristics and clinical characteristics with anxiety level.

Methodology: A descriptive design study was carried out during the period from 20th November, 2015 to 25th May, 2016. A random sample comprised of (123) Patients who were diagnosed with ischemic heart disease. The data were collected through the utilization of the developed questionnaire, and by means of structured interview technique. The study instrument was adopted and developed by the researcher for the purpose of the study. It was consisted of three parts: Part one socio-demographic characteristics. Part two of the questionnaire was clinical characteristics, and part three was to measure the anxiety level by using zung self- rating anxiety scale which include (20) question. The instrument used observes anxiety level as the following: Within normal range (20-44); Minimal to moderate anxiety (45-59); Marked to severe anxiety (60-74); and most extreme anxiety (75-80). The analysis of the data was used descriptive statistics (frequencies, percentages, and mean of score) and statistical inferential (multi Regression, ANOVA, and t- test) to find out association differences between study variables and anxiety level.

Results: The study findings indicated that there were the majority of participants have marked to severe anxiety= (60-74) in patients with ischemic heart disease at the study sample (58.5%) and show to the existence of statistically significant differences between the study variables with the anxiety level.

Conclusion: The study concluded that variables (age and duration of disease) have affected on the anxiety adversely. If the patient's age is advance the anxiety level will decrease, while if duration of disease was short time will lead to increase in the anxiety level.

Recommendation: Development and implementation of effective strategies in nursing for reducing anxiety level regarding healthy life styles and physical activity such as (relaxation exercises, deep breathing, bathing and muscle

relaxation) depending on the identification level of anxiety opreparation of appropriate and effective nursing management of patients with ischemic heart disease.

Keywords: Anxiety, Patient, Ischemic heart disease: Zung rating scale.

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INTRODUCTION

Anxiety is a subjective experience of the individual appraised as negative emotion that occurs in response to perceived threats that occurs from internal or external sources and can be real or imagined. Anxiety affects negatively in quality of life in patients with ischemic heart disease (1).

Normal anxiety response, called the “fight or flight ” response, is activated by danger, either real or imagined, it leads to changes in three “systems of functioning”: the way you think (cognitive), the way your body feels and works (physical), and the way you act (behavioral),these three systems change varies, depending on the person and the context (2).

The study by Kumbasar et.al, (2007) reported that the relation between cardiac diseases and anxiety has been known for long years. The sudden cardiac death risk occurring after diagnosis of cardiac diseases or life threatening conditions related to cardiac diseases frequently causes anxiety and dysphoria and usually causes depression(3).

The role of anxiety regarding cardiac prognosis is unclear. Several studies in patients with ischemic heart disease have shown that anxiety is related to adverse cardiac outcomes, defined as fatal and nonfatal cardiac events and in hospital ischemic and arrhythmic complications(4)..

Anxiety increases the mortality rate in patients with heart diseases by increasing the risk from ventricular arrhythmias and sudden cardiac death, consequently (5)..Patients with ischemic heart disease fall into two large groups: patients with Coronary Artery Disease (CAD) who most commonly present with stable angina and patients with Acute Coronary Syndromes (ACS), which is composed of patients with acute myocardial Infarction (MI) with ST Segment elevation and those with unstable angina and non-ST segment elevation MI(6)..

A significant limitation of the studies focusing on the relationship between anxiety and impaired prognosis in patients with myocardial infarction conducted thus far is that most have used questionnaires to assess the presence of elevated symptoms of anxiety(7).

Standardized screening clinical questionnaires such as Zung Self-Rating Anxiety Scale can be used to detect anxiety symptoms, and suggest the need for a formal diagnostic assessment of anxiety disorder(8).

.Anxiety had impacts on the patients’ physiological reactions, therefore, nurses need to identify anxiety in the patients and try to reduce it by using proper methods(9).

The onset of symptoms is an important trigger for anxiety in patients with coronary artery disease (CAD) and causes an increased risk for AMI and also causes a fear of sudden death in this group of patients(10).

Myocardial infarction is one of the cardiovascular life threatening diseases. Incidence of MI is increasing throughout the world. By the year of 2020 the incidence rate is expected to increase by 120% for women and 137% for men in developing countries compared with 30-60% in developed countries (11).

The objective of our study is to assessment of anxiety level in patients with ischemic heart disease at Misan center for the cardiac diseases and surgery in Al-Amarh city, and determines the association between socio-demographic characteristics and clinical characteristics with anxiety.

OBJECTIVE

To determine of anxiety level in patients with ischemic heart disease, and determine the association between socio-demographic characteristics and clinical characteristics with anxiety level.

METHODOLOGY

A descriptive design study was carried out during the period from 20th November, 2015 to 25th May, 2016. Official permission was obtained from the director of Misan Center for cardiac diseases and surgery in Al-amarh city for conducting the present study. A random sample comprised of (123) patients who were diagnosed with ischemic heart disease ,those who are reviewing the Misan center for cardiac diseases and surgery for the treatment and checking health status as a follow-up, were included in the study sample.

The study instrument was adopted and developed by the researcher to measure anxiety level in patients with ischemic heart disease. It was consisted of three parts: Part one socio-demographic characteristics, which consisted of (5) items, that included (age, gender, marital status, level of education and occupational status), while the part two of the questionnaire was clinical characteristics comprised of (3) items, which included (smoking, duration of disease and frequency of hospitalization), and part three was to measure the anxiety level by using zung self- rating anxiety scale which include (20) question and each question has 4 responses that are ranked from 1 to 4 except questions (5,9,13,17,19) were reversible and the patient selects one response that is more suitable with his emotional state. Score of the response were categorized according to the likert scales: (1) None or a little of the time, (2) some of the times, (3) Good part of the time and (4) Most or all of the time. The instrument used observes anxiety level as the following: Within normal range (20-44):1; Minimal to moderate anxiety (45-59):2; Marked to severe anxiety (60-74):3; and Most extreme anxiety (75-80):4. (Zung WW.1971)⁽¹²⁾.

The data were collected through the utilization of the developed questionnaire, and by interview technique with the subjects who were individually interviewed, by using the Arabic version of the questionnaire in the study sample. The data collection process from each patient spends approximately (15-20) minutes to complete the interview. The data of present study were analyzed through the application of two statistical approaches. A descriptive statistical approach that includes (frequency, percentage and mean of score)and an Inferential statistical approach that includes(t-test, ANOVA and multiple regression). Results were determined as highly significant at (P<0.01) significant at (P<0.05) and non-significant at (P>0.05).

RESULTS:

Table (1): Distribution of the Socio-demographic Data of the Study Sample

Variables	Characteristics	(n=123)	
		F	%
Age (year)	≤ 40	8	6.5
	41-50	27	22.0
	51-60	29	23.5
	≥ 61	59	48.0

Gender	Male	67	54.5
	Female	56	45.5
Marital Status	Single	9	7.3
	Marriage	83	67.5
	Divorced	11	8.9
	Widowed	20	16.3
Level of Education	Illiterate	39	31.7
	Read & write	16	13.0
	Primary graduate	18	14.7
	Mediated graduate	10	8.1
	Secondary graduate	14	11.4
	Institute post graduate	16	13.0
	College post graduate	10	8.1
Occupational Status	Employment	50	40.7
	Self-employment	30	24.4
	Unemployment	32	26.0
	Retirement	11	8.9

n = number of sample, F=frequencies, %= Percentages, ≤ =Less than and equal, ≥= More than and equal.

Table 1 show that the majority of age group to the study sample were within (61 year and more) 59(48%), while the majority of participants were male 67(54.5%). In relation to, the majority of marital status were married 83(67.5 %).Concerning to the subjects level of education, the results show that most study sample were illiterate 39(31.7%). In addition to, majority of occupational status to the study sample were employment 50(40.7%).

Table (2): Distribution of the Patients by their Clinical characteristics related to disease

Variables		Characteristics		(n=123)	
			F	%	
Smoking		None	72	58.5	
		Yes	51	41.5	
Number of cigarette per day		None	72	58.5	
		10 and less	3	2.4	
		11-20 cigarette	21	17.1	
		21-30 cigarette	13	10.6	
		31-40 cigarette	7	5.7	
		41-50 cigarette	3	2.4	
		51cigarette and more	4	3.3	
Duration of disease		< 1 year	44	35.77	
		1-	10	8.13	
		2-	26	21.14	
		3-	11	8.94	
		4-	3	2.44	
		5-	11	8.94	
		6-	8	6.50	
		7-	5	4.07	
		8-	2	1.63	
		9-10 Years	3	2.44	
Frequency of Hospitalization		2 and less	48	39.0	
		3-4 Times	33	26.8	
		5-6 Times	20	16.3	
		7-8 Times	7	5.7	
		9-10 Times	15	12.2	

n = number of sample, F=frequencies, %= Percentages, < =Less than

Table -2- show that major of the study sample was not smoking (58.5%) while the majority to number of cigarette per day for patients' smoking were (11-20 cigarette per day) (17.1%). regarding to the subjects duration of disease who were (< 1 year) amounted to (35.8%). Finally, the more of the symptoms frequency of disease for the sample has (2 and less) were (39%).

Table (3):Distribution of the Levels of Anxiety Among the Study Sample According to the Interpreting the Anxiety Index

Interpreting the Anxiety Index	Frequency	Percent
Normal range anxiety =(20-44):1	13	10.6
Minimal to moderate anxiety =(45-59):2	23	18.7
Marked to severe anxiety =(60-74):3	72	58.5
Most extreme anxiety =(75-80):4	15	12.2
Total	123	100.0

Table 3 reveals that the majority of participants have marked to severe anxiety=(60-74):3, in patients with ischemic heart disease by interpreting the anxiety index at the study sample 72(58.5%).

Table (4):Association Between Anxiety Levels and socio-demographic Data

Dependent Variable	Independent Variable X									Model				
Anxiety Level Y	Coefficients value	Gender X ₁	Age X ₂	Marital Status X ₃	Level Education X ₄	Occupational Status X ₅	Smoking X ₆	Duration of disease X ₇	Frequency of hospitalization X ₈	Model Summary		ANOVA		
												d.f	F	Sig.
										B Unstandardized	3.257	-0.030	-0.195	0.093
T-test	5.506	-0.172	-2.376	0.938	0.452	0.699	0.158	-2.058	-0.123	R ²	0.116			
Sig.	0.000	0.863	0.019	0.350	0.652	0.486	0.875	0.042	0.902	R ²	0.054			

R: Sample regression, R²: Regression Square, R²: Adjusted Regression Square, df: Degree of Freedom, sig: Significant, F: F- Test ,Regression equation $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_8X_8$

Y(Anxiety Level)=Error(Residual) + Age(X₂) + Duration of disease (X₇)

Regression equation $\rightarrow Y = 3.257 + 0.195X_2 + 0.061X_7$

This table shows a statistically significant difference between (anxiety level) and socio-demographic data (age and duration of disease) when analyzed by student (t-test). The regression

coefficients is (0.341), R Square is (0.116) and Adjusted R Square is (0.054) that mean the independent variable (age and duration of disease) effect on (anxiety level) is (12%) and the remaining (88%) is due to other factors, such as genetic factors, fear from unknown and death and emotional status. Also the table shows no a statistically significant difference between dependent variable (anxiety level) and independent variable (gender, marital status, level education, occupational status, smoking and frequency of hospitalization).

DISCUSSION

The result of present study revealed that the majority of age group to the study sample were within (61 year and more) (48%), while the majority of participants were male 67(54.5%)(table 1). This results agree with the study ⁽¹³⁾ which reported that prognostic association of anxiety post myocardial infarction with mortality and new cardiac events. These studies described follow-up (on average, 2.6 years) of 5750 patients with MI. The mean age at time of the index MI ranged from 54 years to 63 years, and 82.5% of patients was male. In relation to, the majority of marital status were married 83(67.5 %). Concerning to the subjects level of education, the results show that most study sample were illiterate 39(31.7%). In addition to, majority of occupational status to the study sample were employment 50(40.7%) (table-1). This study supported by ⁽¹⁴⁾ stated that assessment of the depression and anxiety in patients with acute coronary artery disease. According to the results of this study, two disorders of depression and anxiety having significant impact on the heart patients with high prevalence among heart patients need effective measurements in quick recognition of harmful effects and decreasing them by nursing personnel.

Our study revealed that major of the study sample was not smoking 72(58.5%) while the majority to number of cigarette per day for patients who smoke were (11-20 cigarette per day) 21(17.1%), regarding to the subjects duration of disease who were (< 1 year) amounted to (35.8%). Finally, the more of the symptoms frequency of disease for the sample has (2 and less) were (39%) (table-2). This study supported by ⁽¹⁵⁾.

The findings of our study reveals that the majority of participants have marked to severe anxiety=(60-74):3, in patients with ischemic heart disease by interpreting the anxiety index at the study sample 72(58.5%)(table-3). Review: anxiety and quality of life in patients with Myocardial Infarction, this review shows that higher level of anxiety is associated with an impaired quality of life of in patients with MI. Anxiety symptoms even predict the development of functional limitations and as a result patients cannot take care of themselves. Therefore screening for anxiety should be integrated in standard care of patients with MI. The results supported with study ⁽¹⁶⁾ stated that 30% of patients with MI reported no anxiety, 23% indicated mild level of anxiety, 25% were on moderate level of anxiety and 22% were on high (extreme) level of anxiety. Even 30% of patients had no anxiety 22% of patients had still high level of anxiety therefore attention should be given in those patients. Anxiety affects negatively in quality of life in patients with MI. Identification of the level of anxiety can help plan effective nursing management of MI patients

As a result of the data analysis, there is found association between (anxiety level) and socio-demographic data (age and duration of disease) when analyzed by student (t-test). The regression coefficients is (0.341), R Square is (0.116) and Adjusted R Square is (0.054) that mean the independent variable (age and duration of disease) effect on (anxiety level) is (12%) and the remaining (88%) is due to other factors, such as genetic factors, fear from unknown and death and value and believes. Also the table shows no a statistically significant difference between dependent variable (anxiety level) and independent variable (gender, marital status, level

education, occupational status, smoking and frequency of hospitalization)(table-4).This results agree with the study⁽⁷⁾which reported that generalized anxiety disorder was associated with an almost twofold increased risk of adverse outcomes independent demographic and clinical variables, in this study indicate that anxiety has a much greater influence on the course of coronary artery disease than its clinical correlates. It has been shown that patients who have two or more hospitalizations due to coronary heart disease with new hospitalization have higher levels of anxiety. This information is important given that the literature has repeatedly emphasized the negative impact of anxiety on the outcome of coronary artery disease and it is considered that anxiety actually worsens the outcome of the disease.

Current anxiety positively correlated with the age. This means that we can expect that elderly have a higher intensity of anxiety and consequently a higher risk for adverse outcome, which is a significant risk factor for coronary heart disease and its complications ⁽¹⁷⁾.

The majority of studies showed that anxiety affected physical, social, spiritual aspect of life on patients with MI. In addition, there is evidence that anxiety symptoms can predict the development of functional limitation in the future, suggesting a causal relationship between anxiety symptoms and functional disability ⁽¹⁸⁾.

CONCLUSION:

1. The majority of the patients with ischemic heart disease in the Misan society have marked to severe anxiety level.
2. The study concluded that association between the anxiety level with the age and duration of disease affected the anxiety adversely. If the patient's age is advance the anxiety level will decrease, while if duration of disease was short time will lead to increase in the anxiety level.

RECOMMENDATIONS

Development and implementation of effective strategies in nursing for reducing anxiety level regarding healthy life styles and physical activity such as (relaxation exercises, deep breathing, bathing and muscle relaxation) depending on the identification level of anxiety to preparation of appropriate and effective nursing management of patients with ischemic heart disease.

REFERENCES:

1. Bimala, P.; Charuwan, K.:Review: Anxiety and Quality of life in Patients with Myocardial Infarction.*Nurse Media Journal of Nursing*, 1,1, January 2011., 105 – 115
2. Neil, A. Rector; Danielle, B.; Kate, K.; Linda J.Massiah: Anxiety disorders An Information guide. Centre for Addiction and Mental Health, (2008) p:4-6
3. Dilek, Y. ; Ali, A.; Kemal, K.; Hakan, U.; Yusuf, A.; Zeynel,A.Yetgin :The Comparison of Depression and Anxiety Levels in Patients with Acute Coronary Syndrome. *Journal of Clinical and Analytical Medicine*. Department of Cardiology, Bursa, Turkey, 2014;5(5):p 3-390
4. Rothenbacher, D.;Hahmann, H.;Wu`st, B.; Koenig, W.& Brenner, H.: Symptoms of anxiety and depression in patients with stable coronary heart disease: prognostic value and consideration of pathogenetic links. *Eur J CardiovascPrevRehabil* 2007;14:P.P:547–54.
5. Kawachi, I.; Sparrow, D.;Vokonas, PS.& Weiss, ST. :Symptoms of anxiety and risk of coronary heart disease: The Normative Aging Study. *Circulation*. 2004; 90. P.P: 2225-2229.
6. Cannon, C.P., &Braunwald, E.(2008). Unstableangina, in Braunwald's Heart Disease, p Libbyet al (eds). Philadelphia, saunders.

7. Roest, A. M., Zuidersma, M., & de Jonge, P. (2012). Myocardial infarction and generalised anxiety disorder: 10-year follow-up. *The British Journal of Psychiatry*, 200(4), 324-329.
8. Mosleh, S. Kareem & Sirwan, K. Ali: Assessment of anxiety level among nurses at teaching hospitals in Hawler city. *Kufa Journal for Nursing Science*, (2012). Vol:2; No.:2 P.P:83-88
9. Mansoor A., Hadi R., Hakimeh H. rezaii & Hadi K.: Assessment of the depression and anxiety in patients with acute coronary artery diseases. Faculty of nursing and midwifery of Razi, Kerman university of medical sciences, Kerman, Iran. *Iranian Journal of Critical Care Nursing*, (2012) Vol. 4. No. 4, Pages: 197 - 202
10. Todaro, J. F., Shen, B. J., Raffa, S. D., Tilkemeier, P. L., & Niaura, R. Prevalence of Anxiety Disorders in Men and Women With Established Coronary Heart Disease. *Journal of Cardiopulmonary Rehabilitation and Prevention*, (2007). 27(2), 86-91.
11. World Health Organization (2008). World health statistics 2008.
12. Zung, WW. : Arating instrument scale for anxiety disorders. 1971; 12: 371-9. available from. [https:// www.anxiety center.com/](https://www.anxietycenter.com/). (Access on 21/8/2011).
13. Roest, A. M., Martens, E. J., Denollet, J., & de Jonge, P. Prognostic association of anxiety post myocardial infarction with mortality and new cardiac events: a meta-analysis. *Journal of the Psychosomatic medicine*, (2010). 72(6), 563-569.
14. Arab, M., Ranjbar, H., Hosseini Rezaee, H., & Khoshab, H. Assessment of the depression and anxiety in patients with acute coronary artery disease. *Journal of Critical Care Nursing*, (2012). 4(4), 197-202.
15. Lana, L. Watkins; Gary G. Koch; Andrew, S.; James A. Blumenthal; Jonathan R.T. Davidson ; Christopher O'Connor, & Michael H. Sketch : Association of Anxiety and Depression With All-Cause Mortality in Individuals With Coronary Heart Disease . *Journal of the American Heart Association*. 2013;. 112(68).
16. Bimala, P. & Charuwan, K.: Review: Anxiety and Quality of life in Patients with Myocardial Infarction. *Nurse Media Journal of Nursing*, (2011), 1, 1; P: 105 – 115
17. Snezana, V. Ciric-Zdravkovic ; Olivera, V. Zikic ; Dragana, M. Stanojevic & Svetlana, M. Petrovic-Nagorni: Anxiety in patients with acute coronary syndromes. *The European Journal of Psychiatry*, (2014) vol. 28 no. 3 .
18. Hosseini, S. H., Ghaemian, A., Mehdizadeh, E., & Ashraf, H. (2014). Levels of anxiety and depression as predictors of mortality following myocardial infarction: A 5-year follow-up. *Cardiol J*, 21, 370-377