

PSYCHIATRIC MORBIDITIES, PERSONALITY TEMPERAMENT AND COPING STYLE IN A SAMPLE OF EGYPTIAN PATIENTS WITH ISCHEMIC HEART DISEASE

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ABSTRACT:

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Back Ground: Ischemic heart disease (IHD) is the leading cause of death worldwide. It is responsible for up to one third of deaths. Moreover it will be the most common reason of mortality in the world by the year 2030. In Egypt, IHD is the leading cause of death according to world health organization (WHO) .Over the past 20 years there has been growing evidence of a link between psychiatric disorders and cardiovascular disease. This link has been shown in multiple studies linking psychiatric disorders with an increase in mortality from (IHD).

Aim of work: To identify psychiatric comorbidities the temperament of the personality among patients with different groups of ischemic heart diseases.To study the coping style among patients with Coronary artery diseases.

Patients and Methods: Cases were selected from patients attending the cardiology clinics and coronary catheterization unit in cardiology department, Ain shams University Hospitals. They were divided into three groups and the controlA written informed consent was obtained from all patients involved in the study and the subjects are given a detailed explanation of the nature and aim of the study. **General health questionnaire** was done for all patients for screening followed by **SCID** to detect the psychiatric comorbidities and follow up after one month, then **TCIR** to detect the personality temperament and **Coping process scale** to detect the coping styles in the study sample.

Results: Following the screening, SCID was done for diagnosis of psychiatric disorders..Our results shows statically significance difference between group A, group B ,group C and the control as regard psychiatric disorders including depression and anxiety with (**p value <0.001**).

Conclusion: our results suggested screening for psychiatric disorders in Ischemic heart disease patients as they were more prevalent in CHD than in normal population.

Keywords: Ischemic heart diseases (IHD), Depression , Coping , personality , comorbidities .

Role of researchers

All authors contributed to the production for this manuscript. M.S was responsible for the field work.

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of death in almost every region of the world⁽¹⁾ According to the

World Health Organization (WHO), CVDs account for 17.7 million or 31% of all deaths worldwide. An estimated 7.4 million of these deaths are due to coronary heart disease (CHD)⁽²⁾

CHD, also known as ischemic heart disease or coronary artery disease is a common term for the build up of a waxy substance, called plaque, in the heart's arteries, leading to the failure of coronary circulation to supply adequate blood circulation to cardiac muscle and surrounding tissue—a phenomenon that can result in a myocardial infarction (MI) ⁽³⁾

Acute rupture of plaque in the coronary artery resulting in flow-limiting lesion is one of the important mechanisms of acute coronary syndrome (ACS) which include ST-segment elevation myocardial infarction (STEMI), non-STEMI (NSTEMI), and unstable angina (USA) ⁽⁴⁾

An intriguing relationship between mental illness and CHD appears to exist. A higher prevalence of mental diseases in CHD patients has been demonstrated. Conversely, people suffering from a mental disease seem to have an increased risk of CHD. A common pathophysiological mechanisms may link both diseases ⁽⁵⁾

Type D personality is specified by a combination of two fixed personality structure: negative affectivity and social inhibition ⁽⁶⁾ Negative affectivity is the tendency to experience negative emotions constantly such as restlessness, boredom, fear and irritability in all times and situations. Social inhibition is the intendency to inhibit expressing the emotions, high levels of insecurity experience in social situations and extreme control of self-revelation for fear of others' displeasures ⁽⁷⁾.

Type D personality is relatively common. The estimations show a range of 21-28% of cardiovascular patients and 53% of the people with high blood pressure among the public population. ⁽⁸⁾

Coping strategies are generally divided into adaptive and maladaptive coping strategies. Reactions like rumination, aggression, and passive avoidance have been considered as maladaptive coping strategies,

and adaptive coping strategies include learning new skills, seeking help, and venting anger. ⁽⁹⁾

AIM OF WORK:

To identify psychiatric comorbidities, the temperament of the personality among patients with different groups of ischemic heart diseases.

To study the coping style among patients with Coronary artery diseases.

PATIENTS AND METHODS:

1) **Type of the study:** This is a cross sectional descriptive and comparative study.

2) **Site of the study:** Cases were selected from patients attending the cardiology clinics and coronary catheterization unit in cardiology department, Ain shams University Hospitals.

The cardiology department Ain Shams University hospitals are located in western Cairo, serving both urban and rural areas, including greater Cairo and other governorates as well. The Cardiology clinic is available 3 times per week; each clinic serves about 50 patients.

The catheterization unit is working 6 days per week and serves around 30 to 40 patients per day.

3) **Subjects:** The cases diagnosed with IHD were divided into 3 groups; According to the number of vessels affected in the diagnostic angiography to :

1. Patients for conservative medical treatment.
2. Patients for Percutaneous Coronary Intervention (PCI).
3. Patients for Coronary artery bypass graft (CABG).

- Each group was consisted of 30 patients. All patients fulfilling the inclusion criteria offered to participate in the study until completion of the sample size.

The sample size was calculated by the community department Ain shams university.

Permits and approval:

The following approvals were obtained in order to conduct the study:

- Approval from department of Cardiology Ain Shams University.
- Approval of the ethical committee of Faculty of medicine Ain Shams University.

Inclusion and exclusion criteria:

Patients included should fulfil the following criteria,

- 1) Age: ranges between 18-60 years to exclude the effect of age(a before 18 years personality is still not well developed and after age of 60 years the effect of aging will affect on personality profile).
- 2) Gender: males and females.
- 3) Consenting patients using a written informed consent.

Presence of current Axis I psychiatric disorder is excluded.

4) Procedures:

- A- A written informed consent will be obtained from all patients involved in the study and the subjects are given a detailed explanation of the nature and aim of the study.
- B- Study proper:
 1. Cardiological Assessment will be done including cardiological examination and investigations (ECG, echo, diagnostic angiography).

2. Sociodemographic data will be collected by self-designed questionnaire according to the psychiatric sheet of the institute of psychiatry Ain Shams University.

3. The cases and controls will be assessed using the following measures:

- a) General Health questionnaire (GHQ) for screening of psychiatric disorders.
- b) Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) for axis I diagnosis.
- c) The Temperament and Character Inventory (TCI).
- d) Coping processes scale.

5) Date analysis

Statistics was done using SPSS Statistics version 22, it is a [software package](#) used for [statistical analysis](#). Long produced by [SPSS Inc.](#), it was acquired by [IBM](#) in 2009. A p value of <0.05 was considered significant and a p value of < 0.01 was considered highly significant.

RESULTS:

Sociodemographic data of each group of the study sample.

In our sample:

As regard Group (A): Our results showed that 80% of the patients lies between 50-60 years as regard the age (n=24), As regard the gender we found that 60% of the patients are males (n=18). It also showed that 87% lives in urban areas (n=26). Moreover it was found that 37% of them are Technical graduate (n=11) and 53% were employed (n=16). when asking about the marital status it was found that 83% of the group (A) are married (n=25).

As regard Group (B): It was found that 67% of this group between 50-60 years as regard the age (n=20). As regard the gender 80% of the patients were males

(n=24).it is showed in the results that 87% lives in urban areas (n=26). Also it was found that 30% of them are Technical graduate (n=9)and 77% are employed (n=23) .when asking about the marital status 87% of the group (B) are married (n=26).

As regard Group (C):it was found that 87% of the patients between 50-60 years as regard the age (n=26). As regard the gender 93% of the patients are males (n=28).As regard the the residence 93% lives in urban areas (n=28). Also it as found that 63% of the group are illiterate (n=19)and 60% are

employed (n=16).when asking about the marital status 90% of the group (C) are married (n=27).

As regard control group: the results showed that 63% of this group between 50-60 years as regard the age (n=19). As regard the gender 63% of the patients are males (n=19) .as regard the residence 77% of this group lives in urban areas (n=23). Also it was found that 33% have Bachelor degree (n=10) and 90% are employed (n=27) .As regard the marital status 83% of the control are married (n=25).

Table (1): shows the sociodemographic data of the cases and the controls.

		Groups									
		Medical ttt Group (A)		PCI Group (B)		CABG Group (C)		Control		Total	
		N	%	N	%	N	%	N	%	N	%
Age	30-39 Years	0	0.00	3	10.00	1	3.33	5	16.67	9	7.50
	40-49 Years	6	20.00	7	23.33	3	10.00	6	20.00	22	18.33
	50-60 Years	24	80.00	20	66.67	26	86.67	19	63.33	89	74.17
Gender	Male	18	60.00	24	80.00	28	93.33	19	63.33	89	74.17
	Female	12	40.00	6	20.00	2	6.67	11	36.67	31	25.83
Residence	Urban	26	86.67	26	86.67	28	93.33	23	76.67	103	85.83
	Rural	4	13.33	4	13.33	2	6.67	7	23.33	17	14.17
Education	Illiterate	14	46.67	15	50.00	19	63.33	2	6.67	50	41.67
	Primary school	0	0.00	0	0.00	1	3.33	0	0.00	1	0.83
	Secondary School	1	3.33	2	6.67	5	16.67	3	10.00	11	9.17
	Technical raduate	11	36.67	9	30.00	4	13.33	7	23.33	31	25.83
	Bachelor degree	4	13.33	4	13.33	1	3.33	10	33.33	19	15.83
	Post graduate	0	0.00	0	0.00	0	0.00	8	26.67	8	6.67
Occupation	Unemployed	3	10.00	1	3.33	10	33.33	0	0.00	14	11.67
	House wife	1	3.33	1	3.33	0	0.00	0	0.00	2	1.67
	Sick leave	10	33.33	5	16.67	2	6.67	3	10.00	20	16.67
	Employed	16	53.33	23	76.67	18	60.00	27	90.00	84	70.00
Marital Status	Single	1	3.33	2	6.67	1	3.33	4	13.33	8	6.67
	Married	25	83.33	26	86.67	27	90.00	25	83.33	103	85.83
	Divorced	0	0.00	1	3.33	0	0.00	1	3.33	2	1.67
	Widow	4	13.33	1	3.33	2	6.67	0	0.00	7	5.83

Detection of psychiatric comorbidities

And when it comes to the psychiatric assessment, **General health questionnaire** was done to all the cases and the control then **SCID** was done for the diagnosis of psychiatric disorders to those with GHQ

positive and follow up SCID was done also 1 month later.

It was found that 33% (n=10) of **group A** were GHQ positive and in **Group (B)** 57% (n=17) were positive also in **Group (C)** 60% (n=18) were positive.

Table (2): shows the psychiatric comorbidities among the study groups and the control.

		Groups										Chi-Square	
		Medical ttt Group A		PCI Group B		CABG Group C		Control		Total		X ²	P-value
		N	%	N	%	N	%	N	%	N	%		
GHQ	positive	10	33.33	17	56.67	18	60.00	0	0.00	45	37.50	29.404	<0.001*
	negative	20	66.67	13	43.33	12	40.00	30	100.00	75	62.50		
SCID 1	Depression	0	0.00	2	6.67	6	20.00	0	0.00	8	6.67	47.203	0.001*
	Anxiety	2	6.67	5	16.67	4	13.33	0	0.00	11	9.17		
	PTSD	1	3.33	0	0.00	0	0.00	0	0.00	1	0.83		
	Somatization	1	3.33	0	0.00	0	0.00	0	0.00	1	0.83		
	Adjustment	2	6.67	5	16.67	5	16.67	0	0.00	12	10.00		
	Free	24	80.00	16	53.33	11	36.67	30	100.00	81	67.50		
	Anxiety & Adjustment	0	0.00	1	3.33	2	6.67	0	0.00	3	2.50		
	Depression & Anxiety	0	0.00	1	3.33	2	6.67	0	0.00	3	2.50		
SCID 1 (1 Month)	Depression	0	0.00	1	3.33	11	36.67	0	0.00	12	10.00	49.613	<0.001*
	Anxiety	2	6.67	6	20.00	4	13.33	0	0.00	12	10.00		
	PTSD	1	3.33	0	0.00	0	0.00	0	0.00	1	0.83		
	Somatization	1	3.33	0	0.00	0	0.00	0	0.00	1	0.83		
	Adjustment	0	0.00	1	3.33	0	0.00	0	0.00	1	0.83		
	Free	26	86.67	22	73.33	15	50.00	30	100.00	93	77.50		

So, Depression was found in two patients in group B and six patients in group C.

- Anxiety was found in two patients in Group A, five patients in group B and four patients in group C.

Follow up SCID after one month showed that depression was found in one patient in group B and eleven patients in group C.

Moreover anxiety was found in two patients in group A, six patients in group B and four patients in group C.

DISCUSSION:

The World Health Organization (WHO) reports that cardiovascular diseases contribute to 17.5 million deaths per year and depressive disorders are the fourth leading cause of the global disease burden. By 2020, it is estimated that depression would be the second most common cause of death worldwide surpassing the other conditions. A bidirectional relationship has

been noted between cardiovascular diseases and psychiatric comorbidities.⁽¹⁰⁾

When studying the Socio-demographic of the study sample the current study sample included 70 male patients and 20 female patients also 19 male controls and 11 female controls with total 74% males and 26% females. Ages ranged from 30-60 years in both patients and controls with the majority of the sample fall between 50-60 years with no statistical significance as regard age (P-value: 0.140). This shows agreement with *Borham et al. (2014)* who found 67.4% were male patients and 32.6% were female patients, with age ranging from 30 to 70 years in their study sample.⁽¹¹⁾

However, in contrast to the current results *Yazadi et al. (2008)* study have reported an older average age of presentation in their sample, which could be attributed to different inclusion criteria as patients with age up to 80 years were included in their study whereas in our study age range was (18-60) years Among our sample we found as regard the Past History of psych disorders there is only one patient in Group A and

another one in Group C. previously sought psychiatric consultation yet they received any medical treatment this is line with *Bezjanetal.,(2016)* who found no patients in this study sample had history of psychiatric disorders.⁽¹²⁾⁽¹³⁾

In our study, 45 patients reached the cut off value of the GHQ which is 7. They are further assessed by (SCID) for diagnosis of different psychiatric disorders.

➤ **In group (A)** we found that 80% (n=24) were free from any psychiatric disorders whereas 7% (n=2) was found to have adjustment disorder and Anxiety respectively. Also one patient with PTSD and one with somatization. Similar findings were reported by *Bankier et al.2004* their results showed that Generalized anxiety disorder is most common psychiatric disorder found in stable patients with CAD on conservative medical treatment. However they found that recurrent depression is the second most common followed by PTSD and alcohol abuse one this is may be explained by the stigma of the psychiatric disorders so most of patients deny any of the symptoms and also by the fact that *Bankier et al.2004* study was done for the outpatients stable patients only. In contrary to our patients that include the patients in the inpatient setting followed the diagnostic angiography⁽¹⁴⁾.

➤ **Group (B)** It was found that 17% (n=5) have anxiety disorder, 17% (n=5) have adjustment disorder then depression is found in 7% (n=2) in this group. This is not line with *Abrams et al.,2009* who found depression is the most common followed by Anxiety also this may be explained that they collected their sample from outpatients and inpatients settings⁽¹⁵⁾

➤ **As regard group (C)** we also found that 20% (n=6) of this group was

diagnosed by Depression according to the SCID, 17% (n=5) had adjustment disorder then Anxiety is found in 13% (n=4) also 6% had mixed anxiety depression. Also *Lichtman et al.,2008* employing 1176 undergoing CABG surgery reported in their study that depression followed by Anxiety are the most common psychiatric disorders found in patients For CABG.

In conclusion the current study found the most common psychiatric disorder found was Adjustment disorder (12%) of the cardiac patients followed by Anxiety disorder (11%) then depression in (9%) of the sample, Mixed anxiety depression in (3%) and lastly each of PTSD and somatization is (3%) of the patients with different grades of IHD⁽¹⁶⁾.

Recommendations:

Educational programs to raise awareness of the psychiatric comorbidities among the cardiological diseases especially the ischemic heart diseases patients.

Educational programs to raise awareness of the personality temperament and the coping styles among cardiologists.

Limitation:

The small sample size, so that the results could not be generalized.

Not a well-representative community sample, as the sample was collected from Ain Shams University hospital only.

Declaration:

All authors declared no conflict of interest.

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الاضطرابات النفسية وطبع الشخصية ونمط التكيف في عينة من المرضى المصريين المصابين بداء القلب الإقفاري

أحمد سعد محمد ومنى محمود الشيخ و أحمد محمد أنسى ومروة عبد الرحمن سلطان و ولاء محمد صبرى

يُعتبر مرض القلب الإقفاري أحد الأسباب الرئيسية للوفاة في جميع أنحاء العالم. حيث يُعد هو المسئول عن ما يصل إلى ثلث الوفيات. وعلاوة على ذلك فمن المتوقع أن يكون هو السبب الأكثر شيوعاً للوفيات في العالم بحلول عام ٢٠٣٠. وفي مصر، يُعد مرض القلب الإقفاري السبب الرئيسي للوفاة وفقاً للتقارير الصادرة عن منظمة الصحة العالمية.

على مدى السنوات الـ ٢٠ الماضية، كانت هناك أدلة متزايدة على وجود صلة بين الاضطرابات النفسية وأمراض القلب والأوعية الدموية. وقد ظهر هذا الارتباط في دراسات متعددة معنية بالعلاقة بين الاضطرابات النفسية وبين زيادة في الوفيات الناجمة عن مرض القلب الإقفاري.

الغرض من الدراسة تحديد مجموعة مختلفة من العوامل الديموجرافية المصاحبة لمرض القلب الإقفاري.

التعرف على طبع الشخصية بين المرضى الذين يعانون من مجموعات مختلفة من أمراض القلب طريقة الدراسة: تم تقسيم الحالات التي تم تشخيصها بمرض القلب الإقفاري إلى ٣ مجموعات. المرضى الذين سيخضعون للعلاج الطبي التحفظي (شريان واحد) والحالات التي سوف تخضع للتدخل التاجي عن طريق القسطرة العلاجية (شريانين) والمرضى الذين سيخضعون لجراحة تحويل مجرى الشريان التاجي (٣ شرايين). وسوف تتكون كل مجموعة من ٣٠ مريضاً. وسيتم عرض المشاركة على جميع المرضى الذين يستوفون معايير الانضمام للدراسة حتى الانتهاء من إتمام حجم العينة.

النتائج بعد الفحص ، تم إجراء SCID لتشخيص الاضطرابات النفسية. ومتابعة SCID تم بعد شهر واحد. تظهر نتائجنا فرق الدلالة ثابتاً بين المجموعة (أ) ، المجموعة (ب) ، المجموعة (ج) والتحكم فيما يتعلق بالاضطرابات النفسية التي تسبب الاكتئاب والقلق مع (قيمة $p > 0.001$) وأيضاً متابعة SCID يظهر فرق الدلالة الثابتة (قيمة $p > 0.001$)

الخلاصة: نتائجنا تشير إلى فحص الاضطرابات النفسية لدى مرضى أمراض القلب الإقفارية حيث انها أكثر انتشاراً في أمراض القلب التاجية