

## LVEF Relation to Depression in Coronary Patients

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### Abstract

**Background:** LV dysfunction reflects the impairment of pumping function of the heart. Left ventricular ejection fraction (LVEF) of >50% refers to the excellent pumping condition and less than 30% illustrates the decreased ability or even the failure. Depression is one of the most common psychological disorders. From the cognitive point of view and because depression is a widespread psychological problems in coronary patients the aim of this research is evaluation of the relation between LVEF, depression, gender and age.

**Methods:** 128 patients with coronary heart disease in shahid madani heart hospital were enrolled. Data were statistics analyzed.

**Results:** The results of the current study showed that a close meaningful relationship exists between gender and depression ( $p=0.0001$ ) and also between gender and LVEF degree ( $p=0.03$ ). other parameters such as age.

**Conclusion:** Several studies in both inside and outside of Iran have confirmed these results. Patients with coronary artery disease need complementary treatment such as antidepressant medication and coping with negative mood techniques.

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## Introduction

Left ventricular ejection fraction (LVEF) reflects the pumping function of left ventricle, if higher than 50% denotes excellent pumping function and 30 percent or lower indicates severe dysfunction.<sup>1</sup> Depression is one of the most common psychological disorders.<sup>2</sup> Currently the patients are generally treated with respect to bio-psychosocial status.<sup>3</sup> Depression is a widespread psychological problems in coronary disease that influences not only directly but also indirectly heart diseases specially coronary artery disease.<sup>5</sup> A research by Harvard Cincinnati Medical College on coronary patients indicated depression role as a risk factor.<sup>6</sup> Iran university of medical sciences reports patients with infarctions myocardial (MI) have severe depression.<sup>7</sup> Kordestan medical university reported 70 percent of coronary patients had depression which was more prevalent in females.<sup>8</sup> In addition, Colombia university figured out that from 314 cases, 57 patients got moderate to severe depression with BDI>16 grades.<sup>9</sup> Brazilian university announced physical disease causes psychological disorders during ones life.<sup>10</sup> Based on Tabriz cardiovascular research center 14 percent of candidate patients for cardiac surgery had psychological problems.<sup>11</sup>

## Methods

128 patients with coronary heart disease in shahed madani hospital were enrolled based on sampling with BDI2 test and LVEF. All patients were examined before hospitalization by research instruments. If there was depression matched with another hypothesis. The main aim of this study is to evaluate LVEF and the level of depression in coronary patients during one year.

## Results

**Table 1-** Gender relation to LVEF

	Gender		Total
	Female	Male	
Count 0-30 LVEF degree	1	8	9
gender within%	1.6 %	12.1%	7.1 %
Count 30-40 gender within%	9	17	26
	14.8 %	25.8%	20.5 %
Count 40-50 gender within%	27	21	48
	44.3 %	31.8%	37.8 %
Count 50 high-gender within%	24	20	44
	39.3 %	30.3%	34.6%
Count Total gender within%	61	66	127
	100.0%	100.0%	100.0%

### Chi- Square Tests

	Value	df	Asymp. Sig. (2- sided)
Pearson chi-square	8.836 <sup>a</sup>	3	.032.
	9.619	3	.022.
	6.337	1	.012
	127		

According to table (1) and based on X2 test it was observed that about 1.6 percent of woman had LVEF>30 %, 14/8 ranked between 30% to 40%, 44.3% between 40% to 50% and 39.3% LVEF>50%. According to P value of 0.032, it can be inferred that there is a meaningful relation between LVEF and gender.

**Table 2-** Gender and Depression Relationship:

DEPRESS	Gender		Total
	Female	Male	
No symptom Count	21	52	73
% within Gender	33.3%	77.6%	56.2%
Count Slight	22	8	30
Count % within Gender	39.4%	11.9%	23.1%
Moderate Count	14	4	18
Count % within Gender	22.2%	60%	13.8%
Count severe	6	3	9
Count % within gender	9.5%	4.5%	6.9%
Count Total	63	67	130
gender Count % within	100.0%	100.0%	100.0%

  

	Value	df	Asymp.Sig. (2-sided)
Pearson-Chi- Square	26.155 <sup>a</sup>	3	.000
	27.166	3	.000
	17.937	1	.000
	130		



According to table (2) and based, the following results were obtained: About 33.3 % of females had no symptom of depression, 34.9 % was slightly depressed, 22.2 percent had moderate and 9.5 percent suffered from severe depression. As a result considering P value of 0.000, it can be inferred that there is a meaningful relation between depression and gender.

## Discussion

LVEF study indicated the existence of a meaningful relationship between gender and LV dysfunction ( $P=0.03$ ) and LV dysfunction in men is worse. It can be said that gender of man is one of risk factors at coronary patients and because they face with stresses at life so addition to training stress reducing techniques, omitting salt, cholesterol, alcohol from their diet and antidepressant medication could be helpful. Depression intensity among patients group also shows the meaningful relationship between gender and depression ( $P=0.000$ ). The degree of depression in women is significant and ranked from slight to severe. Therefore, considering the role of women in family it can be suggested that before their discharge from hospital, they should be visited by a psychiatrist. This findings confirm the researches of Harvard, Colombia, Brazil, Iran, Tehran,<sup>13</sup> Kordestan, Shahr-e-Kord,<sup>14</sup> Meriland<sup>15</sup> and Tabriz university of medical sciences that shows females more frequently develop depression than males. Moreover, in our study there was no significant relation between LV dysfunction and depression, This is in contrast with Melle reports, the rate of depression and the severity of depressive symptoms are significantly related to severity of LV dysfunction. 16as Berlin heart institute reports depressive symptoms predicted a decrease in physical functioning, specially patient with  $LVEF < 45\%$ .<sup>17</sup> The present study doesn't show any meaningful relationship between LV dysfunction in one side and being native or nonnative, depression age and marriage on the other side.

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