

The Correlation Of Depression With Coronary Heart Disease

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ABSTRACT

Coronary heart disease is the leading cause of death worldwide, causing not only physical disability but also psychological problem. Anxiety and depression are the most common comorbidities found along with coronary heart disease. In this present study, we obtained 85 participants (60 males, and 25 females) to assess the association of coronary heart disease with depression. Spearman and Eta test were used to statistically investigate the association of age, gender, nuptial and employment status with depression among individuals with coronary heart disease. We found that gender and nuptial status statistically and significantly associated with depression ($r = 0.652$ and $r = 0.764$ respectively), but age and employment did not significantly associate with depression ($r = 0.067$ and $r = 0.066$ respectively). This study indicates that there is an association between coronary heart disease and depression. Gender and nuptial status serve as contributing factor to the development of depression among individuals with coronary heart disease.

Keywords: Coronary Heart Disease, Depression, BDI-II

INTRODUCTION

Coronary heart disease (CHD) is the leading cause of death worldwide. It is caused by accumulation of atheroma plaque which obstructs and limits blood flow for intracardiac muscle oxygenation. CHD is noted as the number 1 out of 10 most common diseases in Indonesia in 2018, with increasing prevalence each year, CHD affects approximately 4.5% of Indonesian citizens.^{1,2}

Physical disability has been well reported in CHD, yet current studies also showed that psychological comorbidities occur in individuals living with CHD. This contributes to escalated social-economic burden; in the US alone, annual cost of CHD is nearly 219 billion, due to direct medication cost, longer hospitalization, or laboratory assessments.³ It is approximated that in every five individuals with CHD, one

individual will develop depression or anxiety over the course of the disease.⁴

Depression prevalence in general population is approximated to be 10% over the course of life time. Depressive disorder is characterized by the presence of depressed mood, loss of pleasure (anhedonia), fatigue, loss of energy, and decreased concentration. Two thirds of individual hospitalized for acute myocardial infarction is also found to experience mild depression, and another one third experience depression even after discharged from hospital. It is also found that complications related to acute myocardial infarction is even more severe in those with more severe form of depression.^{5,6}

Alen Zhubur et al. in 2021 stated that depression is negatively related to physical ability, emotional role, mental health, and general wellbeing, in which physical fitness is found to be have the highest correlation with depression.⁷ As

depression is also thought to be correlated with CHD, we aim to investigate the correlation of depression with CHD and assess which factors that may contribute to the development of depression among individuals with CHD.

METHOD

This present study is an analytical correlative study with cross sectional design. Eighty five individuals diagnosed with CHD (60 males, and 25 females) were obtained consecutively from Cardiology Clinic of Haji Adam Malik Central Hospital of Medan, Indonesia. BDI-II questionnaire will be delivered to the participants to assess the scale of depressive symptoms experienced by these individuals. Spearman and Eta test were used to statistically investigate the association of age, gender, nuptial and employment status with depression among individuals with coronary heart disease.

RESULT

Table 1 shows characteristics of CHD patients who participated in this study. Median age was 51.50 (30-58) and 60 subjects were males (70.6%), while 25 subjects were female (29.4%). Most of the participants were married (n=70, 82.4%), and were employed (n=45, 52.9%). BDI=II score was found to be 16 (10-28).

Table 1. Patients characteristics

Variables	Median (min-max)	n (%)
Age	51.50 (30-58)	
Gender		
-Male		60 (70.6%)
-Female		25 (29.4%)
Nuptial status		
-Married		70 (82.4%)
-Not married		15 (17.6%)
Employment		
-Yes		40 (47.1%)
-No		45 (52.9%)
BDI-II	16 (10-28)	

We found that age is not associated with depressive symptoms (p = 0.067) as shown in Table 2.

Table 2. Age and depressive symptom correlation (with Spearman test)

Variabel	n	p
Age	85	p= 0,067

Gender and nuptial status were found to be significantly correlated with depressive symptoms, while employment were not.

Table 3. Gender, nuptial status, and employment with depressive symptoms (with Eta test)

DISCUSSION

Variable	n	r	F count	F table
Gender	85	0.602	67.92	3.95
Nuptial status	85	0.664	103	3.95
Employment	85	0.086	0.66	3.95

This present study is in line with study from Andre Conradie et al. which also found no association of age in depressive symptoms among individuals with CHD. Ethnic and cultural difference may vary this result as stated in the study from Alen Zhubur et al. which found that age is indeed associated with depressive symptoms severity.^{7,9} We also found that gender and nuptial status are associated with depressive symptoms among individuals with CHD.

CONCLUSION

Gender and nuptial status serve as contributing factor to the development of depression among individuals with coronary heart disease.

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