ORIGINAL ARTICLE

Correlation of Depression and Illness Cognition in Coronary Artery Disease at Hasan Sadikin Hospital Bandung, Java, Indonesia

Purba Deo[1], Arifah Nur Istiqomah[1], Veranita Pandia[1], Lynna Lidyana[1], Badai Bhatara Tiksnadi[2], Santi Andayani[1]

[1] Department of Psychiatry, Dr. Hasan Sadikin Hospital Bandung, Faculty of Medicine Universitas Padjadjaran, Indonesia
[2] Department of Cardiology and Vascular, Dr. Hasan Sadikin Hospital Bandung, Faculty of Medicine Universitas Padjadjaran, Indonesia

ABSTRACT

Introduction: The incidence of depression in coronary artery disease (CAD) is higher than in the general population. The factor is associated with depression is learned helplessness. Helplessness is one of the domains of illness cognition, which is someone's preoccupation with unpleasant side effects of chronic disease related to daily functioning. Aim of this study was to determine the correlation between helplessness of illness cognition and symptoms of depression in CAD at Hasan Sadikin Hospital (RSHS), Bandung from November to December 2020. **Method:** The research method is a quantitative study with a cross-sectional design on CAD patients, male, and aged 55 years and over. Illness Cognition Questionnaire (ICQ) was used to assess illness cognition and depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9). **Results:** This study involved 86 participants with a mean age of 62.4 ± 5.53 years, an average length of treatment of 3.4 ± 3.45 years, and 34 people (39.5%) had depressive symptoms. Of the 34 people who had depressive symptoms there were 4 persons (4.65%) with moderate depressive episodes and 1 person (1.16%) with major depressive episodes. The bivariate analysis using the rank Spearman correlation coefficient found that helplessness (r=0.337, p=0.001) had a significant relationship with depressive symptoms; whereas acceptance and perceived of benefit had no significant relationship with depression (r=-0.125, p=0.126,) and (r=0.035, p=0.374) respectively. **Conclusion:** This study concludes that depressive symptoms have a significant correlation with helplessness of illness cognition in CAD patient and there is a role of physician and cardiologist to help patients with these problems.

Keywords: Coronary artery disease, Depression, Helplessness, Illness cognition

Corresponding Author:
Purba Deo, MD
Email: purba16001@mail.unpad.ac.id
Tel: +62117046421

INTRODUCTION

Depression can occur in patients with coronary artery disease (CAD) (1-5). The rate of depression in coronary artery disease is relatively high (20-40%), greater than the figure in the general population, which is 7% (1,6-9). Wulandari's research (2017) in four hospitals in Bandung, one of which was in Dr. Hasan Sadikin Hospital (RSHS) found that the rate of depression that occurred in CAD patients was 15-20% (10). Factors predisposing to depression are now known, such as female gender, age less than 55 years, previous history of depression, social isolation, and functional impairment, but the cause is not certain (8,10).

Learned helplessness can lead to depression (3,11-14). Learned helplessness is a mental state in which the human, which is forced to endure an aversive or unpleasant stimulus, becomes unable or unwilling to avoid subsequent encounters with that stimulus, even when there is an opportunity to "escape," perhaps because they have learned that escaping cannot control the situation (11-14). The helplessness in chronic disease patients can be measured by Illness Cognition (15-21). Illness cognition is the patient's understanding of the disease and its impact on the patient (20-23).

Illness cognition plays an essential role in disease management, morbidity, mental well-being, functional recovery, and comorbid psychiatric disorders in a person with CAD (17-20). The important illness cognitions for a person with CAD are helplessness, hopelessness, health threats, unacceptability, and helplessness. Helplessness from illness cognition is the preoccupation of a person

with unpleasant chronic side effects related to daily functioning (20-22).

In 2017, Delima et al. conducted a study to assess illness cognition in patients with coronary artery disease who were participating in a cardiovascular rehabilitation program at the RSHS Cardiovascular Rehabilitation Prevention Unit. They found that the illness cognition of the subjects has more positive aspects than negative aspects. They also stated that illness cognition in coronary artery disease influenced the patient's motivation to complete the cardiac rehabilitation program. Helplessness aspect of illness cognition, which was high in CAD patients, can be lowered through improving physical, psychological, and spiritual conditions and increasing family involvement in dealing with problems related to the disease (22).

Sturrock's 2016 study in Australia on patients with low vision, found that symptoms of depression were precipitated by the presence of significant helplessness and a lack of patient acceptance of the disease. Illness cognition in this study was measured using the Illness Cognition Questionnaire (ICQ) instrument and examination of depressive symptoms using the PHQ-9 instrument. From the results of this study, it was found that illness cognition correlates with depressive symptoms in low vision patients (23).

Patel et al. In 2018 conducted a study of illness cognition in subjects with infertility in India. They found that illness cognition can predict the subject's emotional well-being and healthy behaviour (20). Learned helplessness can be the etiology of depression. In CAD patients undergoing cardiac rehabilitation at RSHS, the depiction of the helplessness of illness cognition is positive, but the incidence of depression in CAD in outpatient clinics of RSHS is still higher than the general population (15-20%). The aim of the study is to determine the relationship between helplessness, illness cognition and depression in patients with CAD in outpatient clinics and cardiac rehabilitation clinics at RSHS.

MATERIALS AND METHODS

Design and Sampling Technique
This study is a quantitative analysis using a cross-sectional design to determine the relationship between helplessness of illness cognition and depressive symptoms in patients with coronary artery disease from November to December 2020. The respondents were selected using consecutive sampling technique (24).

The target population of this study was all cardiovascular disease patients who came to the Cardiovascular Rehabilitation Prevention Unit, Cardiac Polyclinic at the Integrated Cardiac Care Installation (ICCI), and the Outpatient Cardiac Polyclinic RSHS. The accessible population was all coronary artery disease patients who

came to the Cardiovascular Rehabilitation Prevention Unit, the ICC Cardiac Polyclinic, and the outpatient Cardiac Polyclinic RSHS. The research time is one month, from 27th November to 27th December 2020. The criteria for selecting research subjects consisted of inclusion and exclusion criteria. The inclusion criteria were as follows: Patients diagnosed with coronary artery disease, at least the last two weeks, age 55 years and over, male, and willing to participate in the study. These criteria were made regarding to avoid bias or confounding factors for depression such as female gender and age below 55 years. Participants with coronary artery disease were those diagnosed by a doctor in at least two weeks. This time criterion is implemented to meet the requirements of the PHQ-9 instrument. The exclusion criteria were as follows: Patients with severe mental disorders, including psychotic disorders and mental and behavioural disorders due to substance abuse, are currently undergoing hospitalization and patients with severe physical illness.

Data collection technique
The research was carried out after obtaining a letter of approval from the RSHS Medical Research Ethical Committee. Data collection is carried out through the following steps:
Based on medical records, research subjects were selected according to the inclusion and exclusion criteria.
Informed consent was administered to the patient.
Assessment of illness cognition using the ICQ instrument by manual filling by the patient.
Assessment of depressive symptoms using the PHQ-9 instrument by manual filling by the patient.
The patient fills in the instrument in room 246 (Outpatient Cardiac Polyclinic) or the Gym room (Cardiovascular Rehabilitation Prevention Unit at the ICCI).
Interview of the patients who have depressive symptoms to determine the presence of depressive disorders using the MINI ICD 10 instrument which is conducted in room 246 (Outpatient Cardiac Polyclinic) or Gym room (Cardiovascular Rehabilitation Prevention Unit at the ICCI).

Measurement Method
The Indonesian version of Illness Cognition Questionnaire (ICQ) to measure the patient's perception of the disease which has been adapted into Indonesian by Delima, et al (22). Patient Health Questionnaire 9 (PHQ 9) for depressive symptom screening which has been adapted into Indonesian by Onie S., et al (27).

Mini International Neuropsychiatric Interview International Statistical Classification of Diseases and Related Health Problems 10 (MINI ICD 10) for interviews with depressive disorders, psychotic disorders and mental and behavioural disorders due to substance abuse (28).

Data Analysis

Data analysis was performed using the Statistical Product and Service Solution (SPSS) program at a 95% degree of confidence and a p value ≤ 0.05. Statistical analysis was conducted according to research objectives. Univariable analysis was conducted to describe the characteristics of research subjects including age, gender, education, occupation, depression screening based on PHQ 9 score and illness cognition based on ICQ. Categorical data are presented as numbers and percentages, and numeric data are presented as mean, standard deviation, or median, and minimum value. After that we conduct Chi-square analysis between all demographic characteristic and variables.

The correlation between illness cognition (ICQ score) and depression (PHQ 9 score) in patients with coronary artery disease was carried out using the Rank Spearman because the data were not normally distributed.

The interpretation of the results that was based on the strength of the correlation, the direction of the correlation, and the p value are as follows: the strength of the correlation (r) based on Guillford, namely: 0.0–<0.2 = very low; 0.2– 0.4 = low; 0.4– <0.7 = moderate, 0.7– <0.9 = strong, 0.9–1.0 = very strong. Unidirectional positive correlation means that the greater the value of one variable, the greater the value of the other variables. Negative correlation direction: opposite direction means that the greater the value of one variable, the smaller the value of the other variables. The significance of the statistical test results is determined based on the p value. The criterion for significance is the p value, p≤ 0.05 means it is significant.

Ethical Approval

This research has had ethical approval from Medical Research Ethical Committee of Dr. Hasan Sadikin Hospital Bandung with reference number: LB.02.01/X.6.5/321/2020.

RESULTS

Of the 88 subjects who participated in this study, there were 86 subjects who met the inclusion criteria with the characteristics shown in table I. Two people were not analysed. They were excluded from the study because they have a history of severe mental disorders. The mean age of the subjects was 62.4 years (SD = 5.53), and the mean length of treatment for the disease was 3.4 years (SD = 3.45 years).

From the demographic data of the subject, it was found that the majority of the subjects was 55-65 years old (67.5%), high school graduates (42%), retired from work (33.7%), resided in the city of Bandung (64%), and married (89.5%). While the data from the body mass index (BMI) of subjects, which were classified based on the criteria of the Asian population (39), mainly fell

Table I: Distribution and Characteristic of Study Subjects and Chi square analysis with depression symptoms (PHQ-9)

Characteristics	n = 86	X^2
Age Group		0.33
55-65	58 (67.5%)	
65-75	25 (29 %)	
≥ 75	3 (3.5%)	
Mean±SD	62.4±5.53	
Education		0.146
Elementary School	12 (14%)	
Middle School	8 (9%)	
High School	36 (42%)	
Diploma or higher	30 (35%)	
Ocupation		0.289
Civil Servant	4 (4.6%)	
Private employee	9 (10.4%)	
Military/Police	1 (1%)	
Enterpreneur	14 (16.3%)	
Retired	29 (33.7%)	
Others	12 (14%)	
Unemployed	16 (20%)	
Domicile		0.207
Bandung	55 (64%)	
Outside of Bandung	31 (36%)	
Marital Status		0.028*
Married	77 (89.5%)	
Not married/Divorced/Widow	9 (10.5%)	
Duration of Treatment		
Median (year)	2 (0.16-17.0)	0.033
Mean±SD	3.4 ± (3.45)	
BMI (kg/m²)		0.887
<18.5	2 (2.3%)	
18.5 – 22.9	14 (16.3%)	
23.0 – 24.9	23 (26.7%)	
> 25.0	47 (34.7%)	

in the obese BMI range group (> 25) with 47 people (34.7%). For the normal range, there were 14 people (16.3%).

Chi-square analysis was carried out for categorical subject characteristics, such as age group, education, occupation, domicile, and marital status, on symptoms of depression and illness cognition. The result was that only the characteristic of marital status was statistically significant (p<0.05), so it can be said that marital status has a relationship with symptoms of depression and scores from its illness cognition (Table I).

An analysis was carried out for age, length of treatment, and BMI, which were tested using the rank Spearman. A p-value of <0.05 was obtained for the criteria of age on the acceptance and perceived of benefit sub-variables, as illustrated in table II. This means that age, length of treatment, and BMI do not correlate with symptoms of depression and illness cognition, except for age on the acceptance sub variables and perceived of benefits.

Table II: Relationship between Length of Treatment, Age and BMI with Illness Cognition and Symptoms of Depression

Variable	Duration of Treatment		Age		BMI	
	r	p	r	p	r	p
Depression (PHQ 9 score)	0.048	0.330	-0.111	0.153	0.016	0.887
Illness Cognition						
Perceived of benefit	0.021	0.425	**0.236***	**0.014**	0.088	0.422
Acceptance	-0.042	0.351	**0.203***	**0.031**	0.084	0.441
Helplessness	0.072	0.255	-0.006	0.477	0.038	0.731

Note: Analysis using *rank spearman*.
r=coefficient, *p*=significant value (<0.05)

An Overview of Cognition Illness in Coronary Artery Disease Patients

Illness cognition, as measured by ICQ, will produce scores of the three sub-variables. Each sub-variable score was measured for its mean value and standard deviation. The dominant aspect was observed, whether it was positive aspects (scores of perceived of benefits and acceptance are higher) or negative aspects (higher scores of helplessness).

In this study, the mean score of the perceived of benefits sub-variable was 19 ± 3, the acceptance sub-variable was 18 ± 4, and the helplessness sub-variable was 10 ± 3 (Table III). This value reflects that the subject's illness cognition has a positive aspect, which means that it was generally good. These results were consistent with the description of illness cognition from previous study by Delima et al (22).

Rank Spearman coefficient analysis was done on illness cognition of the subjects in this study to determine its relationship with the length of treatment, age, and BMI. In table 3, it is found that there was no correlation between length of treatment and body mass index (BMI) with the sub-variables of perceived of benefit, acceptance, and

Table III: Distribution of Illness Cognition and Depression Screening

Variable	n (%)	Score Range Reference	n=86	
			Mean ± SD	Median (Min-Max)
Depression Screening				
PHQ 9		0 – 27	5 ± 4	4 (0 – 18)
PHQ 9 Score Criteria				
No Depression	52 (60.5)			
Mild Depression	21 (24.4)			
Moderate Depression	11 (12.8)			
Moderate Severe Depression	2 (2.3)			
Illness Cognition				
Sub-Variabel Perceived of Benefit		6 – 24	19 ± 3	18 (6 – 24)
Sub-Variabel Acceptance		6 – 24	18 ± 4	18 (8 – 24)
Sub Variabel Helplessness		6 – 24	10 ± 3	9 (6 – 24)

Note: SD=Standard Deviation

helplessness of ICQ (p>0.05).

There was a weak positive correlation between age and perceived of benefit sub-variable (r=0.236; p=0.014), as well as age and acceptance sub-variable (r=0.203; p=0.031) of ICQ. This means that with increasing age, the higher perceived of benefits and acceptance score of ICQ. On the other hand, there was no correlation between age and helplessness sub-variable score, which means that helplessness is not influenced by increasing age in patients with coronary artery disease at RSHS.

Subjects who had depressive symptoms were then interviewed with MINI ICD-10. From the interviews, it was found that all subjects with mild depressive symptoms had no depressive disorders. Meanwhile, of the 11 people with moderate depressive symptoms, 3 (27.3%) experienced moderate depressive episodes. Of 2 people with moderate-severe depression symptoms, one person (50%) had moderate depressive episodes, and one person (50 %) with a major depressive episode (Table IV). After the chi-square analysis was carried out, there was a difference between the depressive symptoms of PHQ-9 and MINI ICD-10 (significance value X^2 <0.05). This means that CAD patients with a PHQ-9 score <10 (mild depressive symptoms) will not experience depressive disorders.

Relationship between Helplessness of Illness Cognition and Symptoms of Depression in Coronary Artery Disease Patients

From the data obtained from the ICQ and PHQ-9 instruments after the data normality test was carried out with the Shapiro Wilk Test, it was found that the data were not normally distributed (p>0.05). The hypothesis test to analyse the relationship between Illness Cognition and Depression was later done using the rank Spearman correlation coefficient analysis.

The results obtained from the rank Spearman analysis did not match what was previously thought. The significant correlation coefficient between the depression score and the predictor variable only occurred with the ICQ helplessness sub-variable (r=0.337, p<0.001). This

Table IV: Depression Severity in Coronary Artery Disease Patients

Variable	Depressive Disorder (MINI ICD-10)			X^2
	Mild Depression n=0	Moderate Depression n= 4 (4.65%)	Severe Depression n= 1 (1.16%)	
Depressive Symptoms (PHQ-9)				
Mild Depression (n=21)	0	0	0	
Moderate Depression (n=11)	0	3 (27.3%)	0	**0,000**
Moderate-Severe Depression (n=2)	0	1 (50%)	1 (50%)	

Analysis using Chi-Square. *X*=significant value

Table V: Correlation between Illness Cognition and Depressive Symptoms

Variable	Depressive Symptoms (PHQ-9)			
Illness Cognition (ICQ)	**Present**	**Absent**	***r***	***p***
High Helplessness	23.25%	20.1%	**0.337**	**0.001**
Low Helplessness	13.95%	41.86%		
High Acceptance	15.11%	29.06%	-0.125	0.126
Low Acceptance	22.09%	33.72%		
High Perceived of Benefit	18.6%	30.23%	-0.035	0.374
Low Perceived of Benefit	18.6%	32.55%		

Note: Analysis using *Rank Spearman*. ** ($p < 0.01$)

means that ICQ helplessness has a positive and weak relationship with depressive symptoms, suggesting that the higher the helplessness sub-variable score, the greater the depressive symptoms (Table V).

The ICQ sub-variables were then analysed using the rank Spearman with each item of the PHQ-9 depression symptom questions. The results of the analysis showed that ICQ helplessness has an effect on item P1 "Little interest or pleasure in doing things" (r=0.209; p=0.027), item P3 " Trouble falling or staying asleep, or sleeping too much" (r=0.203; p=0.030), item P4 "Feeling tired or having little energy" (r=0.261; p=0.008), item P7 " Trouble concentrating on things, such as reading the newspaper or watching television" (r=0.379; p<0.001), and item P8 "Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual?" (r=0.464; p<0.001), as shown in table VI. This means that helplessness was positively and moderately correlated with motor retardation symptoms in individuals with coronary artery disease, and positively and weakly correlated with the symptoms of lack of interest and pleasure, complaints of difficulty sleeping, feeling tired or lack of energy and decreased concentration.

Table VI: Relationship between PHQ-Depression Symptoms and 9 Helplessness Sub-variables of ICQ

PHQ-9	Helplessness		Acceptance		Perceived of benefit	
	r	***p***	***r***	***p***	***r***	***p***
P1	**0.209***	**0.027**	0.061	0.288	0.014	0.450
P2	0.157	0.074	0.035	0.375	0.051	0.320
P3	**0.203***	**0.030**	-0.120	0.135	0.010	0.465
P4	**0.261***	**0.008**	-0.150	0.083	-0.114	0.149
P5	0.030	0.391	0.070	0.261	0.137	0.105
P6	0.146	0.090	0.013	0.452	-0.081	0.229
P7	**0.379***	**<0.001**	-0.027	0.403	-0.081	0.230
P8	**0.464***	**<0.001**	-0.078	0.237	-0.040	0.357
P9	0.128	0.120	**-0.186***	**0.043**	**-0.187***	**0.043**

Note: Rank Spearman analysis

The acceptance and perceived of benefit sub-variables had a weak and negative correlation with the symptoms of feeling better off dying in individuals with coronary artery disease (r=-0.186, respectively; p=0.043 and r=-0.187; p=0.043).

DISCUSSION

This study aims to analyse the relationship between helplessness of illness cognition and depressive symptoms in patients with coronary artery disease. As measured by ICQ, illness cognition consisted of three sub-variables, helplessness, acceptance, and perceived of benefit, while depressive symptoms were measured using PHQ-9.

This study found that 2/5 of the respondents suffered from depressive symptoms based on the PHQ-9 scores and few respondents, i.e., almost 6.0% met the criteria for a depression diagnosis. Even though confounding factors have been excluded from the inclusion criteria, this is presumably due to psychosocial factors such as social isolation or the subject's primary support system. In this study, results of the subject's illness cognition were dominated by positive aspects (high acceptance and perceived of benefit scores and moderate helplessness scores). This was presumably because the subjects had an adaptive coping strategy in dealing with the disease. Evidence from this study suggests an association between the helplessness sub-variables and depressive symptoms in patients with coronary artery disease. Regardless of the length of time the patient is treated, and the patient's age, how one thinks of coronary artery disease can be affected by depressive symptoms. In particular, it can be said that the greater the helplessness, the greater the predictability of depressive symptoms.

These findings support the notion that illness cognition is an important factor linking disease to the psychological well-being of patients in general, particularly heart disease. In line with the hypothesis, the helplessness of illness cognition was predictably associated with depressive symptoms. This is consistent with previous studies in low vision patients, which stated that helplessness and acceptance were correlated with depressive symptoms (23). Helplessness can also contribute to and lead to adverse outcomes in patients with chronic diseases. A study conducted on patients with Systemic Lupus Erythematosus by Nowicka-Sauer et al. found that patients with negative perceptions of their illness were positively correlated with anxiety, depression, sleep quality, fatigue, and pain (14).

This study found that depressive symptoms did not have a significant correlation with the acceptance sub-variable. In this study, it was also found that the increasing age of the subject, the higher the ICQ acceptance score. This is consistent with a study by van Driel et al. in 2016, which found that ICQ acceptance scores were better

at older age (17). Research conducted on a respondent of Chronic Obstructive Pulmonary Disease patients in Poland in 2016 found that the patient's acceptance of the disease correlated significantly with the degree of depression. This means that the symptoms of depression occurred because of the low acceptance (18).

Research on 300 respondents of older adults in Poland found that adaptation to disease played a vital role in the adaptation to limitations due to disease in elderly patients. Acceptance of the disease is one of the most critical stages for the patients, making the process of adaptation to the disease more manageable. Acceptance is the process by which a person adjusts to his new life with the illness (19).

In this study, the mean value of perceived of benefit has the highest value. This is presumably due to the influence of the frequency of angina occurrence in patients. Subjects who had chest pain less than once a week and never feel chest pain were in a condition of perceived of benefit and accepted the disease. So that patients tend to avoid the negative psychological condition, such as anxiety and depression (22).

Illness cognition as a predictor of the success of the CAD patient treatment program can be influenced by the patient's response to the threat of his disease. One response is depression. In this study, it was found that depressive symptoms in CAD patients positively correlate with the aspect of helplessness of illness cognition. This is consistent with previous studies that stated helplessness was the aspect most often associated with depression (12-16,21-23).

In this study, we found the symptoms that correlate with the helplessness aspect of illness cognition. Symptoms include lack of interest in activities (anhedonia), insomnia, difficulty concentrating, fatigue, and psychomotor retardation. This is consistent with Glassman et al. that stated the behavioural and psychological mechanisms that link depression with CAD are the depressive symptoms that are often confused with physical symptoms (29-30). Anhedonia is associated with social isolation, poor hygiene, non-adherence to medication, and low patient self-efficacy. Insomnia can be caused by autonomic hyperactivity, which is often associated with obesity, diabetes, hypertension, and metabolic syndrome. Difficulty in concentration will cause the patient to be unable to receive education from the doctor, adherence to medication, and following a program of cardiac rehabilitation (exercise, diet, and risk factor modification) (29).

Fatigue can lead to decreased patient motivation for regular visits to the doctor, medication adherence, and low self-efficacy. Psychomotor retardation will certainly make CAD patients engage in less physical activity, passive participation in following cardiac rehabilitation exercise programs, and non-adherence to medication

(29).

This study analysed the relationship of illness cognition with depression in patients with coronary artery disease, as described in Fig. 1. When investigating the role of length of treatment, age, and BMI of patients, only the acceptance and perceived of benefit sub-variables significantly correlated. This means that the presence of helplessness in patients with coronary artery disease cannot be predicted by length of treatment, age, and BMI. For BMI, these findings are consistent with studies in China that found depressive symptoms decreased along with an increase in BMI (31).
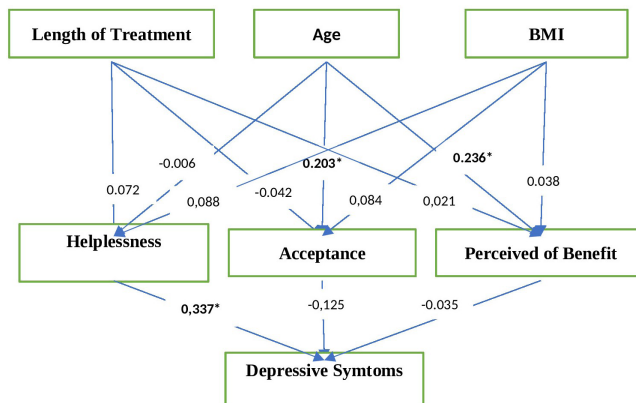

Figure 1: Flowchart of testing the impact of length of treatment and age on the sub-variables of ICQ and its impact on depressive symptom, *p<0.05, ** p<0.01

Regarding COVID-19 pandemic nowadays, Jung Young-Chul suggest that prolonged COVID-19 pandemic could rising anxiety, depression and helplessness complain. He called it corona blue. The condition which depression and lethargy due to social distancing and self-isolation. CAD patients will certainly be affected by the covid19 pandemic. Cardiologists should aware with the helplessness complaints from CAD patients in such form, anhedonia, insomnia, lethargy, and fatigue (32).

The limitation of this study was that the PHQ-9 instrument does not have a domain or dimension division of symptoms. The depression screening instrument which divided the domains or dimensions of depressive symptoms was BDI-II.

Based on the research results, it is recommended to conduct further research to determine the impact of depressive symptoms on cardiovascular morbidity and mortality. Collaboration could be conducted between the Department of Cardiology and Vascular Medicine and the Department of Psychiatry in the development of Psychocardiology as a branch of the Consultation Liasion Psychiatry (CLP) to provide services for patients with coronary artery disease in terms of promotion, prevention, and curation. Screening for depression with PHQ-9 in patients with coronary artery disease can be used as a standard of service at the Cardiac Service Installation and Cardiology Clinic at the RSHS

Outpatient Installation. Patients with a PHQ-9 score > 10 can be consulted to the RSHS Psychiatry Clinic.

CONCLUSION

The helplessness experienced by CAD patients can lead to complaints of anhedonia, insomnia, difficulty concentrating, fatigue and fatigue. This condition may lead to the occurrence of depression.

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