

## Conference Paper

# Depression and Its Related Factors in Indonesian Congestive Heart Failure Patients Population

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## Abstract

**Background:** Depression in Congestive Heart Failure (CHF) patients influence the quality of life and worsen their condition. However, Depression and factors related to its incidences in CHF patients in Indonesia are little known. **Objectives:** This study aimed to identify depression incidences and its related factors, including age, sex, working status, education level, and duration of illness. **Methods:** This study was quantitative with a cross-sectional approach. The population was CHF patients who were undergoing treatment in one of the referral hospital in Bandung West-Java, Indonesia. The sampling technique used consecutive sampling and obtained 51 respondents for one month period. The data was collected using the Beck Depression Inventory-II instrument and analyzed using frequency distribution; Sommers'd Gamma; and Contingency coefficient Lambda. **Result:** The frequencies of respondents who experienced depression were mild in 62.7%; depression in 21.6%, and moderate in 5.9%. Besides, factors that significantly related to a depression were age ( $p=0.001$ ,  $r=-0.419$ ); and duration of illness ( $p=0.02$ ,  $r=-0.396$ ). Other factors were sex; working status; and education level, with the p-value were 0.100; 0.122; and 0.278 respectively. **Conclusion:** Most of the respondents experienced mild to moderate depression with ages and duration of illness as significant related factors. The more ages and the more duration of CHF diagnosis, the less depression occurred to the respondents. Thus nurses need to be conscious of the incidence of depression in younger age and or newly diagnosed CHF patients.

**Keywords:** Congestive Heart Failure, CHF, Depression, Indonesian

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## 1. Introduction

Congestive Heart failure (CHF) is a disease with a high incidence in the world. It was estimated that as many as 26 million people in the world live with CHF, so it requires serious attention globally [1]. Besides, CHF is currently contributing to an increase in hospitalization, morbidity, and high mortality rates in the community [2].

Depression, according to Sokoreli, de Vries, Pauws, & Steyerberg (2016), is a psychosocial problem that is often found in patients with heart disease, especially in

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patients with CHF [3]. Depression in CHF patients is associated with an increase in adverse outcomes including increasing hospitalization, worsening heart failure and mortality [3, 4]. Furthermore, depression is also a predictor of poor quality of life in CHF patients [5, 6]. These things indicated that depression becomes comorbidity that must be anticipated and appropriately managed in CHF patients [7].

The results from various studies based on self-reported questionnaires on the incidence of depression in patients with CHF showed a prevalence rate of 30% - 44% [4], as well as the prevalence of depression in CHF patients in Pakistan reaching 66% [8]. Factors associated with an increased risk of depression based on the previous research include, living alone or not married, and the lack of support [7]; a younger age [4]; low level of education and income, a high of New York Heart Association (NYHA) classification and comorbidities [8].

The incidence of depression in patients with CHF in Indonesia is not widely known; likewise, factors related to the incidence of depression that requires further study related to this. Differences in cultural background, social norms, demographic conditions, and health services enable different results on depression and related factors. Also, the current management tends to pay more attention to physical aspects rather than psychosocial and spiritual aspects in Indonesia currently. So that, this study aimed to identify the prevalence of depression along with the factors associated with the incidence of depression, and these were age, sex, education level, working status, and duration of illness with CHF in the Indonesian population.

## 2. Methods

### 2.1. Study design

This study was a quantitative correlational with a cross-sectional approach. The dependent variable was depression, and the independent variables were age, sex, education level, working status, and duration of illness with CHF.

### 2.2. Sample/participants

The population of the study was CHF patients who underwent treatment in the outpatient ward at one of the hospitals in Bandung, with a population-based on the average number of patients per month of 51 people. This research used a consecutive sampling technique with data collection done for one month period. The inclusion criteria were:

Patients who had a primary diagnosis of heart failure; 18 years or older; Patients were in a stable condition. CHF patients who met the criteria and were willing to take part in the research during the data collection process were 51 respondents.

### 2.3. Instruments

This study used the Beck Depression Inventory-II (BDI-II) as the instrument. The Beck Depression Inventory-II (BDI-II) questionnaire is an instrument for measuring depression in both clinical and non-clinical conditions. This questionnaire consists of 21 question items, which are divided into 3 categories namely cognitive (7 questions), somatic (9 questions), and affective (5 questions) and BDI-II scores rated 0, 1, 2, 3 then added up and included in normal criteria 0-10, mild depression 11-16, depression 17-20, moderate depression 21-30, severe depression 31-40, and peak / extreme depression above 41 [9]

Ginting, Naring, Van Der Veld, Srisayekti, & Becker (2013) has conducted a construct validity test on the Indonesian version of BDI II instrument with results a significantly positive correlation with the DS14 ( $r = .52, p < .01$ ) and with the BAI ( $r = 0.52, p < 0.01$ ) and a significantly negative correlation with the MSPSS ( $r = -0.39, p < 0.01$ ) and LOT-R ( $r = -0.46, p < 0.01$ ) [10]. While the reliability test results showed Cronbach's alpha, estimated on all participants, was 0.90 for the total score (21 items) of the Indo BDI-II scale, 0.80 for the cognitive factor (7 items), 0.81 for the somatic factor (9 items), and 0.74 for the affective factor (5 items). These values indicate adequate to high internal consistency.

### 2.4. Data collection procedure

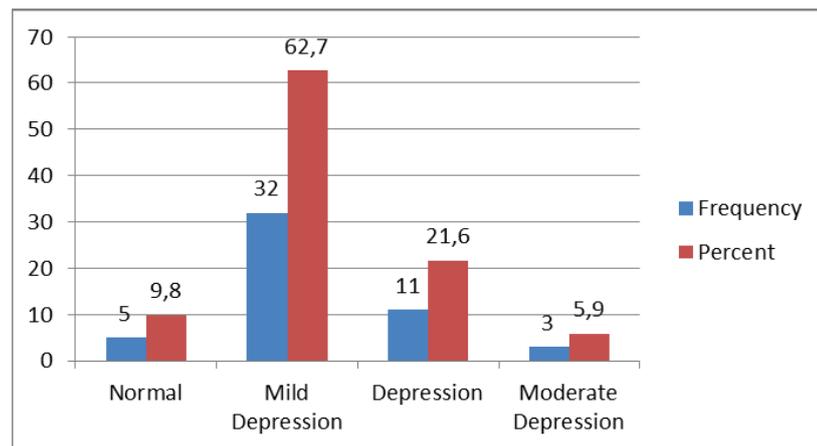
Data collection techniques used instruments and were performed in the cardiac out-patient ward. The researcher previously made an informed consent. Only respondents who were willing to take part in the research can proceed to the instrument filling process. Respondents then filled in the data and returned it to the researchers on the same day.

### 2.5. Data analysis

Data were analyzed using frequency distribution while to see the relationship on nominal variables using the Contingency coefficient Lambda and for the ordinal variables using Sommers'd Gamma.

### 3. Results

Figure 1 shows total respondents 90.2% (46) had depression from the ranges of mild depression, depression, and moderate depression. Of the three categories, the majority of respondents experienced mild depression and only a small proportion with moderate depression.



**Figure 1:** Depression in heart failure patients who underwent outpatient treatment at a hospital in the Bandung.

The table 1 shows that more than half of the respondents are in the age of more than 60, and male reached more than three-fifths of the respondents. Nearly half of the respondents also had higher education, but most of the respondents were unemployed, and none of them single in their marital status, based on the table also seen that more than a third of the respondents had a duration of illness for more than six months.

Table 2 showed the relationship between independent factors, namely: age, sex, level of education, occupation and duration of CHF diagnosis with dependent factors, namely: depression in CHF patients who underwent outpatient treatment at a hospital in Bandung.

Table 2 shows that age and duration of illness have a significant correlation with depression. Age is related to depression with a negative correlation ( $r = -0,477$ ) indicating that the higher the age, the prevalence of depression will decrease, and as well as the duration of illness ( $r = -0,396$ ) meaning that the longer the duration of CHF being diagnosed then the prevalence of depression will lessen.

TABLE 1: Characteristics of CHF patients and respondents in depression categories.

Characteristics	Normal	Mild depression	Depression and Moderate Depression	n	%	p-value
<b>Age</b>						
18 – 40 years	0	0	3	3	5.9	0.001*
41 – 60 years	2	11	9	22	43.1	
>60 years	3	21	2	26	51	
<b>Sex</b>						
Male	4	21	4	29	56.9	0.10**
Female	1	11	10	22	43.1	
<b>Level of education</b>						
Primary school	4	7	1	12	23.5	0.278*
Secondary school	0	9	8	17	33.3	
Higher education	1	16	5	22	43.1	
<b>Working status</b>						
Working	1	9	7	17	33.3	0.122*
Not working	4	23	7	34	66.7	
<b>Marital Status</b>						
Marriage	5	32	14	51	100	-
Un-marriage	0	0	0	0	0	
<b>Duration of illness</b>						
1 – 12 months	1	5	8	14	27.5	0.02*
>12 months	4	27	6	37	72.5	
*Sommers'd Gamma						
**Contingency coefficient Lambda						

TABLE 2

Factors	Depression	
	p	Coefficient correlation (r)
Age	0.001*	-0.419
Sex	0.100**	-
Education level	0.278*	0.131
Working status	0.122*	-0.228
Duration of illness	0.02*	-0.396
*Sommers'd Gamma		
**Contingency coefficient Lambda		

## 4. Discussion

Depression is a psychosocial problem experienced by many patients with CHF [11]. Likewise in this study, it was found that about 62.7% of respondents had mild depression, 27.5% had a high to moderate level of depression, and none of the respondents experienced depression in the severe depression category. Total respondents who were depressed in the study were 90.2% (BDI score  $\geq 10$ ). This result was higher than the prevalence of depression in CHF patients in Pakistan which reached 66% [8], and in developed countries in which BDI scores more than 10 reached 35.3% [12]. The study result showed that the proportion of depressions in this study was higher than in previous studies. The cause of the high proportion of depression in this study is uncertain. However, this might be possible as a result of other factors not analyzed in this study, including the high level of NYHA classification, poor lifestyle [13], a higher symptom burden and low social support [7].

Depression experienced by CHF patients affects the high mortality rate. Husain et al. (2019) in his research stated that each increase of 5 points from the BDI score could increase the risk of death by 23%, so it is crucial for health workers, especially nurses to do a better screening related to depression in patients with CHF and to take preventive measures and management of depression, including the study of any factors associated with the incidence of depression in CHF patients, to anticipate the risk of depression [8].

In this study, age has a significant relationship with the incidence of depression in CHF patients. From this study, it was known that the younger the age, the higher the risk of depression. The majority of patients with heart disease were elderly and felt that they had done tasks for their children and their families, so they do not have that burden associated with it, the opposite occurred in patients with heart disease at a younger age, they thought they still have a duty to be fulfilled, this can worsen their psychosocial conditions [14]. However, these results differ from studies conducted in Pakistan which showed that age was not related to BDI (depression) scores [8] and research conducted by Zahid et al. (2018), which stated that age over 70 years was one predictor of depression [13].

CHF is a chronic disease that limits the activities of sufferers and affects the disruption of their daily roles and functions. Besides, this disease requires treatment management and rehabilitation for a long time, and this affects increasing medical expenses. This condition caused psychosocial stress that developed dynamically in the process of adaptation [15]. According to Allman, Berry, and Nasir (2009), depression developed in

CHF patients associated with coping, the more adaptive coping strategies used such as acceptance and planning will reduce the level of depression experienced by CHF patients [16]. However, those who used more maladaptive methods of coping, such as denial and disengagement, had higher levels of depression. The results of this study indicated that the longer the duration of illness in CHF patients, the risk of depression would decrease. The decrease of the risk shows the process of adaptation carried out by CHF patients, which affects better psychosocial conditions by increasing time. Moreover, this can also be caused by the coping used by patients was adaptive.

Other results from this study showed that the level of education, occupation, and gender did not have a significant relationship with the incidence of depression. This result is different from previous research, which showed that gender, education level had a significant effect on depression [8]. As for employment factors, there have been no other studies that revealed the correlation with depression, while Husain et al. (2019) stated that BDI scores were found to be significantly associated with income [8].

There are several weaknesses revealed in this study. This study did not explain the relationship of CHF classification based on NYHA with depression, nor the relationship of physical symptoms with depression. Besides, it only measures the variables from one hospital or setting of the study.

## 5. Conclusion

Nearly all CHF patients in this study had depression from mild to moderate levels, and no depression was found at severe levels. However, this condition must be watched because psychosocial changes in patients with chronic illnesses are dynamic. Nurses and other health professionals need to assess for depression in CHF patients and consider these related factors. Based on the results of the study it appears that the younger the age of CHF patients have a higher likelihood of depression, and after a minimum of six months of being diagnosed with CHF the risk of depression in CHF patients will decrease. Research related to depression in CHF patients needs to be prepared in a broader setting, and the identification of coping used by patients also needs to be performed.

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