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STRESS LEVELS AMONG MEN AND WOMEN WITH CORONARY HEART DISEASE. IS THERE A DIFFERENCE?

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ABSTRACTS

Coronary Heart Disease (CHD) is one of the non-communicable diseases with a very high mortality rate. CHD can occur in both men and women. CHD is usually followed by psychological reactions such as stress, and stress may contribute to progression of CHD. This study aims to determine the difference between stress levels in men and women with CHD. This research used comparative quantitative methods that used a questionnaire from Kessler Psychological Distress K10. Enrolled 95 samples by random sampling. The results of this study showed that there is no difference in stress levels among men and women with CHD (p=0.083, > 0.05). Both men and women with CAD have experienced stress, but there is no significant difference between men and women.

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1. INTRODUCTION

Cardiovascular diseases (CVDs) are major cause of global death. Estimated 17.9 million mortalities caused by CVDs in 2019 (32% of all global deaths). CVDs are a group of disorders of the heart and blood vessels, one of them is Coronary Heart Disease (CHD) (World Health Organization, 2021). According to the 2018 Basic Health Research (Riset Kesehatan Dasar), the prevalence of CHD diagnosed by doctors in Indonesia was 1.5%, and the West Java itself was greater (about 1.6%) (Kemenkes RI, 2018).

Risk factors for CHD can be categorized into non-modifiable risk factors such as age, male sex, positive family history; major modifiable risk factors such as hypertension, diabetes, high cholesterol; and modifiable behavioral factors such as smoking, sedentary lifestyle, poor diet, excessive alcohol consumption, and stress) (Mozaffarian et al., 2016). Excess physiological reactivity to stress also has been posited as risk factor. Sex is a non-modifiable factor of particular interest because women generally develop tis disease approximately 10 years later in life than do men (Anand et al., 2008).

CHD is also usually followed by a psychological response, such as hopelessness, anxiety, and stress. these three psychological aspects can worsen the prognosis of CHD and can be a barrier to patient recovery. Stress can increase the risk of myocardial ischemia, dysrhythmias, patient memory, and quality of life. Stress also can cause a burst of catecholamine and adrenaline, which can cause constriction of blood vessels and increase heart rate, impair blood flow to the heart, and can lead to heart attacks in CHD patients (Siagian & Wahyuni, 2016).

In some studies, sex is a risk factor and stress level in patients with CHD (Kurnia & Prayogi, 2015; Mabruroh & Syarif, 2020; Marleni & Alhabib, 2017; Siagian & Wahyuni, 2016). Stress levels experienced by people with CHD also varies. However, the level of stress based on sex in CHD patients is not yet clear. Previous studies suggests that women are more vulnerable to psychosocial stress, having greater molecular and biological effects that may be detrimental to cardiovascular health, especially women with CHD (Bangasser & Valentino, 2012; Vaccarino & Bremner, 2017). Understanding sex differences in inflammatory response to stress among patients with CHD may help define potential mechanisms that may increase women's susceptibility to adverse cardiovascular outcomes. Women with CHD have less obstructive coronary artery disease (Almuwaqqat et al., 2019), yet greater risk of myocardial ischemia compared with similarly aged men (Sullivan, Hammadah, Al Mheid, et al., 2018)

There is growing recognition that emotional stress and physiological sex differences in response to stress are important in women's cardiovascular vulnerability (Samad et al., 2014). Several studies have suggested that women with CHD are at higher risk of adverse cardiovascular outcomes than men in the presence of psychosocial exposure. The aim of this study was to determine sex differences in stress levels in CHD patients.

2. METHODS

A comparative quantitative study that enrolled 95 patients with CHD that diagnosed by cardiologist. All respondents divided into two groups based on sex (41 men and 54 women), obtained by random sampling. This study conducted between March 2021 and May 2021 at hospital in Sumedang, West Java.

We used the Kessler Psychological Distress Scale K-10 which had been translated to Bahasa and tested for validity and reliability to examining stress levels in patients with CHD (Azzahra & Paramita, 2019). This is a 10-item questionnaire intended to yield a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent 4-week period. Samples must answer those 10 questions. As a general rule, patients who rate most commonly "Some of the time" or "All of the time" categories are in need of a more detailed assessment. Referral information should be provided to these individuals. Patients who rate most commonly "A little of the time" or "None of the time" may also benefit from early intervention and promotional information to assist raising awareness of the conditions of depression and anxiety as well as strategies to prevent future mental health issues. The answers were summed up, and resulted score less than 20 means not experiencing stress; 20 to 24 means experiencing mild stress; 25 to 29 means experiencing moderate stress; and greater than 30 means experiencing severe stress. Data analysis of this study includes analysis of univariate and bivariate. Stress levels by sex in CHD patients was described using univariate analysis. Bivariate analysis was used to see comparisons or differences in stress levels among men and women patients with CHD. The significance level was set at $p < 0.05$.

3. RESULTS AND DISCUSSION

Table 1 Descriptive data

Stress level	Men		Women	
	n	%	n	%
No	12	29	10	19
Mild	13	32	13	24
Moderate	10	24	13	24
Severe	6	15	18	33
Total	41	100	54	100

Table 2 t-test result

Sex	x̄	σ	t	p
Men	23.22	8.323	-1.754	0.083
Women	26.06	7.199		

This study involved 41 (43%) men respondents and 54 (57%) women respondents, so that the total number of respondents was 95 (100%) respondents. The results showed that 12 men (29%) and 10 women (19%) did not experience stress, 13 men (32%) and 13 women (24%) experienced mild stress, 10 men (24%) and 13 women (24%) experienced moderate stress, 6 men (15%) and 18 women (33%) experienced severe stress (Table 1).

Most men experienced Mild stress (32%), while most women experienced severe stress (33%). In addition, demographic data showed that most sufferers of CHD are women (57%) while men (43%), this is in line with data from Indonesian Ministry of Health that the prevalence of women with CHD in West Java (1.8%) was higher than men (1.4%) (Kemenkes RI, 2018). The results of this study are also in line with previous research (Siagian & Wahyuni, 2016) that showed there were various stress levels experienced by patients with CHD.

As we mentioned, data obtained in this study showed that both men and women experienced various stress levels, even in that level “no stress at all” by 29% men and 19% women (table 1). This finding was quite different and may need further investigation considering some references mentioned that stress frequently occur following chronic illness (Liu et al., 2021; Najafi et al., 2022; Vancampfort et al., 2017). Although, according to Stuart's adaptation model, it integrates biological, psychological, sociocultural, environmental, and legal-ethical aspects of patient care (Stuart, 2014). Biological factors such as chronic disease are predisposing factors and precipitation or the cause of stress (Rinawati & Alimansur, 2016). The limitation is that we did not collect other demographic factors such as sociocultural, environmental, and legal-ethical aspects that might explain this finding.

The t-test result showed in Table 2 (p=0.083 > 0.05) that means there is no difference in stress levels among men and women with CHD. Although many studies found several mechanisms that women can experienced more stress than men such as: hormonal variations (Lau et al., 2019), inflammatory reactivity, and glucocorticoid receptor sensitivity (Sullivan, Hammadah, Wilmot, et al., 2018). But this study found that there is no significant difference between stress levels in men and women with CHD. This result may occur due to the same stressor comes from disease. Predisposing factors are factors that cause stressors, include: biological, psychological, and sociocultural aspects (Silvia, 2020). CHD itself is a stressor from a biological aspect that results in a same stress reaction in both men and women. Previous study found that psychological issues are common in CHD patient (Liu et al., 2021),

CHD is a life-threatening disease, and the treatment also requires high costs, take long time to treat (Hajar, 2017), and have high mortality rate (World Health Organization, 2021). These factors can be stressor to patients with CHD, both man and women. Even more, within 1 year of diagnosis was the highest risk period for psychological symptoms compared with 5 years or more (Liu et al., 2021)

The different result of this study compared with previous studies may be attributable to differences across studies related to sample characteristics, and ascertainment of cardiovascular events. And it is important to mention, that we did not define the result of angiographic severity of CHD in both groups. It is also important to note that there are numerous tools to measure stress levels.

4. CONCLUSION

Based on the discussion above, we can conclude that people with CHD experienced stress in various levels, but there is no difference both men and women. Further study needs to be done to investigate psychological, sociocultural, environmental, and legal-ethical aspects with more numerous respondents.

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