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The Model Theory Approach "Care, Core, Cure" for Patients with Cardiovascular Disease

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Abstract
The impact of cardiovascular disease was felt by individuals and global. By individual approach, prevention and supervision are needed to reduce the burden. Nurses have an essential role in giving holistic standards of nursing practice. The purpose of this study is to provide an overview of the case management of patients with cardiovascular disease by using the theoretical approach "care, core, and cure" model theory. The method used is a case study of 30 patients with Cardiovascular Diseases in Harapan Kita Jakarta National Heart Center. Inform consent was obtained, the initial name and code were assigned to all participant. The results are nine acute coronary syndrome patient, four heart failure patient, ten heart surgery patient, and seven arrhythmia patient. The majority of patients were male, an average age more than 41 years old. Most risk factors are caused by hypertension and smoking. In the acute phase, the "care" and "cure" aspects were more prominent than the "core" aspect. In the non-acute phase, patients need rehabilitation and health education, so the more prominent aspects are "care" and "core" than "cure." The aspect "care" provides an overview of risk factors that result in cardiovascular disease. The "core" aspect shows the needed of education and the "cure" aspects indicating the necessity for medical therapy in patients with cardiovascular disease. In the "Care" aspect, independence nursing intervention can be identified and easily evaluated. In the "Core" aspect, the nurse can recognize the patient's needs during the treatment and provided nursing care plans as needed. In the "Cure" aspect, can be increased coordination among health care providers. Nurse need to develop the model of nursing theory approach in providing nursing care for patients with Cardiovascular Diseases, especially patients who have the opportunity to undergo rehabilitation.

Keywords: cardiovascular disease; "care-core-cure" model; nursing theory.

1. Introduction

The World Health Organization (WHO, 2016), defines cardiovascular diseases as a set of disorders of the heart and blood vessels. These disorders may include Coronary Artery Disease (CAD), cerebrovascular disease, congenital heart disease, rheumatic heart disease, peripheral artery disease, and Deep Vein Thrombosis (DVT) and pulmonary embolism. CAD is a condition in which the blood vessels are impaired in supplying blood to the heart muscle.

The impact of cardiovascular disease is not only felt by individuals but also global. WHO undertakes prevention and supervision to reduce the burden faced by cardiovascular disease with population and individual approaches. Population

approaches such as controlling policies about cigarettes, while individual approaches through primary and secondary prevention. Also, surgical intervention is also needed to treat cardiovascular disease with coronary artery bypass, balloon angioplasty, and valve repair or replacement (1).

In North America, Coronary Artery Bypass Graft (CABG) or Percutaneous Coronary Intervention (PCI) is a widely performed medical procedure for coronary revascularization (2). At the Harapan Kita Jakarta National Heart Center, on average in the last three years, as many as 612 patients underwent CABG. By 2016, as many as 625 patients undergo CABG and show a success. A study was conducted to determine survival in 5 years in CAD patients with three diabetes mellitus who underwent CABG, PCI, or medical. The results show that survival is better in patients undergoing CABG (3). Various studies were conducted to look at CABG outcomes regarding mortality and morbidity. Nevertheless, the impact of CABG also needs to be viewed multidimensionally from the physical, psychological, and social (4).

Nurses have an essential role in it, by giving holistic standards of nursing practice. The American Holistic Nurses Association (AHNA) describes holistic nursing as the interrelation of the bio-psycho-socio-spiritual dimension and views the individual as a unity in the process along with the environment (5). Holistic concepts are used in nursing plans, self-care, self-responsibility, and reflection to help patients to be healthy (6). One theory and model of holistic nursing from Lydia Eloise Hall is "Care, Core, and Cure" theory was used in this study as an approach in giving nursing care to patients with CVD in Harapan Kita Jakarta National Heart Center. The application of nursing care use the “Care, Core, and Cure” model theory approach was based on Lydia E Hall's career centered on cardiovascular care, long-term disease care, and towards rehabilitation.

2. Objectives

The purpose of this study is to provide an overview of case management of patients with cardiovascular disease by using the theoretical approach "care, core, and cure" model theory

3. Methods

The study method was the case study of 30 patients with cardiovascular diseases that consist of Acute Coronary Syndrome (ACS), heart failure, cardiac surgery, and arrhythmia. This study was conducted from January to May 2017 in Harapan Kita Jakarta National Heart Center. Participation was voluntary, and informed consent was obtained from all participants. An initial name and code were assigned to all participant materials to ensure confidentiality.

4. Results

In general, 30 cases of management were grouped into cases of cardiac surgery, ACS, heart failure, and arrhythmias. Thirty cases were managed using the "care, core, and cure" model theory approach developed by Lydia Eloise Hall.

Table 1. Distribution Based on Medical Diagnosis (n=30)

Case	Amount	%	Medical Diagnosis	Amount	%
ACS	9	30	STEMI	7	23,3
			UAP	1	3,3
			SAP	1	3,3
Heart Failure	4	13,3	CHF	2	6,7
			ADHF	2	6,7
Cardiac Surgery	10	33,3	CABG	6	20
			Valve Surgery	3	10
			Vascular	1	3,3
Arrhythmia	7	23,3	Atrial Fibrillation	3	10
			Atrial Flutter	1	3,3
			Junctional Rythm	1	3,3
			Ventricular Tachycardia	2	6,7

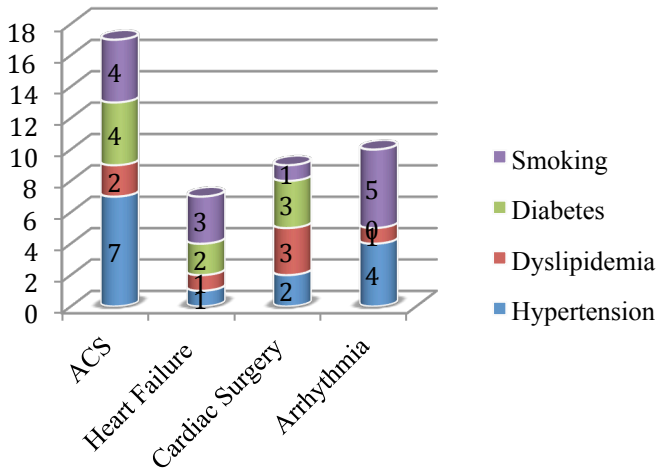
Based on table 1, the majority of patients who managed the case of cardiac surgery with CABG action is 6 cases or 20%. Furthermore, case management with ACS diagnosis with STEMI diagnosis is 7 cases or 23.3%. Cases of arrhythmias with atrial fibrillation in 3 cases or 10% and heart failure as many as 4 cases or 13.3%.

Table 2 Distribution Based on Sex and Age (n= 30)

Case	Age			Sex		
	Criteria	Amount	%	Criteria	Amount	%
ACS	< 20	-	-	Male	7	23,2
	21-40	1	3,3	Female	2	6,7
	41-60	6	20			
	>60	2	6,7			
Heart Failure	< 20	-	-	Male	3	10
	21-40	-	-	Female	1	3,3
	41-60	2	6,7			
	>60	2	6,7			
Cardiac Surgery	< 20	-	-	Male	6	20
	21-40	1	3,3	Female	4	13,3
	41-60	6	20			
	>60	3	10			
Arrhyithmia	< 20	1	3,3	Male	5	16,7
	21-40	-	-	Female	2	6,7
	41-60	1	3,3			
	>60	5	16,7			

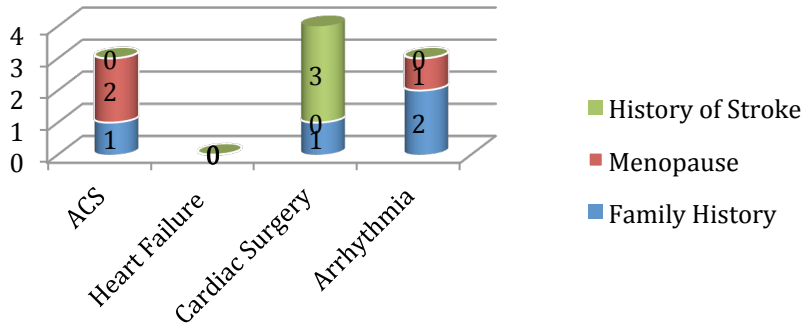
Table 2 shows that the majority of patients aged under the age range 41-60 years in the ACS and cardiac surgery cases were 20%. Based on the evidence, the majority of the age in ACS cases ranged from 41-60 years, heart failure cases> 41 years, heart surgery cases 41-60 years old, and arrhythmia cases aged >60 years. While based on sex, the majority of cardiovascular handling is experienced by men from each case group.

Diagram 1. Distribution Based on Modifiable Risk Factors (n=30)



Based on Diagram 1, the highest risk factors in ACS cases were hypertension as many as seven findings, dyslipidemia as much as two findings, then smoking and diabetes Mellitus each of 4 findings. The most risk factors in cases of heart failure due to hypertension and dyslipidemia each of 1 results, diabetes two outcomes, and smoking as many as three findings. The most risk factors in the surgical case group were diabetes mellitus and dyslipidemia every three findings, hypertension two results, and smoking one finding while the most risk factors in cases of arrhythmia are due to smoking as much as five findings and subsequent hypertension as much as four findings and dyslipidemia as much as two findings, nevertheless, each patient in the case group may have more than one risk factor.

Diagram 2 Distribution Based on Unmodifiable Risk Factors (n=30)



Based on diagram 2, the most unmodified risk factors from 30 cases of management were stroke history in the group of cardiac surgery cases of 3 findings. Whereas according to the case group, the highest risk factor in ACS cases associated with menopause as much as two findings and in the case of arrhythmia associated with family history of 2 results.

5. Discussion

Some of Hall's career concerns are centered around cardiovascular care and long-term illness treatments (7). According to the Australian Institute of Health and Welfare (2017), CVD is one of a group of long-term illness or chronic disease. Types of long-term diseases related to CVD include CHF, arrhythmias, especially atrial fibrillation, hypertension, angina, CHD, and peripheral vascular disease (8). This suggests that all of the cases belonging to chronic diseases require long-term care. Therefore, the use of the theory developed by Hall in providing nursing care in 30 cases under management is expected to have a positive impact and benefits.

Groups of heart failure, arrhythmia, and CAD may experience acute conditions. For example ACS in CAD. In the acute phase, the use of "care" model theory, "core," and "cure" is more prominent in "care" and "cure" aspects than "core." While in the non-acute phase, patients need rehabilitation through learning so that the more prominent aspects of "care" and "core" than "cure." Hall developed his theory at the Loeb Center to deal with non-acute patients who need learning and rehabilitation (7).

Care Aspects

The concept of theory adopted by Hall is the function of nurses in health care is prevention or preventive and health care (7). Therefore, one of the nurse's roles in providing nursing care using Hall theoretical "care" approach is the management of risk factors.

Based on the results of management in 30 cases of patients with CVD, found six risk factors that often arise that is hypertension, dyslipidemia, diabetes, family history, smoking, and menopause. The most risk factor that was found in 30 cases under management was hypertension as many as seven findings, followed by smoking as many as five findings — the risk factors that can be modified in 30 instances of management such as hypertension, dyslipidemia, diabetes, and smoking. Meanwhile, risk factors that can not be changed such as family history, menopause, and history of stroke. Also, age is also a risk factor for CVD that cannot be modified.

Heart failure, arrhythmia, and ACS can be preceded by the presence of CAD disease. In general, The Framingham risk scoring system presents ten risk factors for CAD such as age, gender, High-Density Lipoproteins (HDL) cholesterol, total cholesterol, systolic blood pressure, smoking history, diabetes, family history, ventricular hypertrophy (9). Other important risk factors such as obesity, psychological factors such as stress, lack of vegetable and fruit consumption, and lack of physical activity.

The condition of coronary atherosclerosis results in decreased oxygen supply to the myocardium, leading to myocardial ischemia. Acute myocardial ischemia conditions can lead to various states of the disease such as ACS and arrhythmias. As with atrial arrhythmias conditions that have an automaticity disorder and re-entry are often caused by myocardial ischemia. While in the state of chronic, myocardial ischemia becomes the most common cause and the presence of coronary heart disease, hypertension, and diabetes increases the risk of heart failure (10).

Management of coronary heart disease begins with identifying modifiable risk factors for coronary heart disease. According to Loscalzo (2014), several risk factors for coronary heart disease that can be modified are hyperlipidemia, hypertension and diabetes mellitus while risk factors cannot be adjusted such as age, family history, gender, and history of stroke (11). Increased risk factors for cardiovascular disease with age. Before the age of 60 years, men have a higher risk factor than women, but at the age above 60 years, women or those who have menopause have a higher risk factor than men. Besides, strokes at age less than 55 years in men and 65 years in women may increase risk factors (11).

Core Aspects

In the “core” aspect, the nurse provides explanations and treatment goals to facilitate the process of increasing self-awareness or patient awareness (7). A person who has self-awareness will be able to control himself. Therefore, in this aspect, the patient needs less medical treatment and requires professional care and education handling. Through education, the patient can achieve maximum potential and through rehabilitation becomes a learning process to live with its limitations.

In general, rehabilitation programs include modification of risk factors, supervised practice, and education and counseling (9). According to The British Association for Cardiac Rehabilitation, several essential components that must be

present in the rehabilitation phase include advice on healthy lifestyles, education, risk factor management, psychosocial counseling, cardioprotective drug therapy, and long-term management strategies (12).

After passing through the acute phase and getting educated and undergoing rehabilitation, the patient is expected to prevent recurrence of problems in cardiovascular diseases. As an effort to avoid the occurrence of CAD can be done primary, secondary, and tertiary prevention (9). Primary prevention can be done such as maintaining a healthy lifestyle by controlling weight, physical activity, and quitting smoking. The two most important risk factors that contribute to two-thirds CAD events are smoking and abnormal blood pressure. Smoking can accelerate atherosclerosis in men and women of all ages and increase the risk of thrombosis, plaque instability, myocardial infarction, and death. Also, smoking leads to increased myocardial oxygen demand and reduces the supply of oxygen so that it can trigger angina.

The facts show that quitting smoking, controlling blood pressure and cholesterol and campaigning for prevention and managing it well is important (13). A study was conducted to determine differences in risk factors ACS with Stable Angina Pectoris (SAP) in Japan. The results showed that smoking was an independent predictor of ACS among the risk factors studied. Patients who returned smoking after CAD had a five times more high risk of patients who quit smoking (14).

Secondary prevention such as screening or controlling risk factors such as cholesterol, diabetes, and blood pressure (9) (Humphreys, 2011). Diabetes mellitus accelerates coronary and peripheral atherosclerosis. Also, diabetes is also often associated with dyslipidemia that increases the risk of developing angina, myocardial infarction, and sudden coronary death. The target of cholesterol control is Low-Density Lipoprotein (LDL) <70 mg / dL and hypertension <120/80 mmHg in diabetic patients. On tertiary prevention such as management of CAD post-acute attacks and management of heart failure or postabloker consumption post-acute attacks.

Cure Aspects

Treatment and medical management were given to the patient is a form of "cure" aspect. In this aspect, the nurse collaborates with the doctor in providing nursing care. When patients are acute, "cure" and "care" aspects are more prominent or dominant than "core" ones. In patients with arrhythmias, one of the major management points is with antiarrhythmic drugs and medical intervention. Therefore, the "Cure" aspect becomes dominant in patients with acute arrhythmias. However, when the patient is in a non-acute phase, the "cure" aspect becomes non-dominant. The shape of the "Cure" aspect of the non-acute phase may be the administration of drugs that need to be taken in the long term as in patients with heart failure or postoperative valve replacement.

6. Conclusion

In the "Care" aspect, independence nursing intervention can be identified so the nurse can be easily evaluated. In the “Core” aspect, the nurse can recognize the patient's needs during the treatment. Thus, nursing care may be provided as needed or focused on the patient. Similarly, in the "Cure" aspect, nurse collaboration actions with other professions can be identified thus increasing coordination among health care providers.

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