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Rehabilitation After Myocardial Infraction

The nurses´ role

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Summary

Myocardial infraction is a serious and global health problem; it is result from different risk factors such as hypertension, smoking, obesity and diabetic etc. Myocardial infraction affects quality of life, increase cost of patient care and rate of hospitalization and readmission rates. Patient educating is a key in myocardial infraction patient well-being, modify life style and management of self- care. The aim of this study is to gain deeper knowledge and understanding about the role in rehabilitation after myocardial infraction. The questions are; what are the factors influencing on rehabilitation process? What is the nurse role in rehabilitation? A systematic literature review and qualitative method were used with the help of Oreom theory of self-care. The results stress the special role of nurses. Educating self-management ability, modification of life style, control of the symptoms and patient well-being improving patient's quality of life.

Language: English Key words: Heart, myocardial infraction, self-care, cardiac patient education, quality care, nurse role

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List of Abbreviations

NSTEMI	Non-ST Elevation Myocardial Infraction
SCNT	Self-Care Nursing Theory
STEMI	ST Elevation Myocardial Infraction
ECG	Electrocardiography

1 Introduction

Myocardial infraction, or heart attack, is meaning a situation when the blood flow is reduced or totally stopped to one part of the heart. The lack of oxygen in the heart, when not getting it enough derived by blood all the time, can lead to heart failure, cardiac failure, or arrhythmia and can damage the muscle of the heart. In this case, myocardial infraction could cause high mortality and other complications of heart failure such as infract size or cardiac remodeling. Myocardial infraction divided to two different groups depends on complete or partial blockers, ST elevation myocardial infractions STEMI means complete blockage of one of the arteries that supply the oxygen and nutrition to the heart. Non-ST elevation myocardial infraction means partial blockage, it is similar to angina. (Thygesen et al., 2012)

The patient education and emotional support changes over the time due to the progression of diseases. In order to improve the rehabilitation process, emotional support and educating patient is so important and it is influenced by spiritual traditions and patients cultural. Education can be delivered by nurse and emotional support by family and group sessions provided by health care system and trained nurse. Management of risk factors such as monitoring weight, blood pressure and stop smoking is part of rehabilitation process as well as psychological and emotional support to be able to control the anger, anxiety and observing the sign of depression, and physical activity such as gardening, gym and work, and changing life style to improve the health and rehabilitation process. (Herlian, Rahayu, & Purba, 2017)

Data from various populations statistics suggest that up to 50% of patients hospitalized due to heart failure are readmitted within 6 months. The implementation of disease management program has been shown to be successful in reducing the number of readmissions. Patients with heart failure need education and emotionally support in order to adapt to their chronic condition and perform self-care behaviour. Education, often delivered by nurses, is an important part of all management programs for patients with heart failure, both in clinical practice and research. Nevertheless, nurses play a vital role in educating heart failure patients and their family about the disease in the hospital and outpatient facilities. The process of patient education can be described in five steps similar to the stages of the nursing process. The first step includes an assessment of the patient that includes previous knowledge, misconceptions, learning abilities, learning styles, cognition, attitudes and motivation. After the assessment, the

patient's recourses, barriers and learning needs can be identified in other words defining the needs. The third step is the planning of patient education, selected goals and educational interventions. In the planning stage, the type of education, time and how it should be conducted is being planned. The final step of evaluation is delivery of education. (Strömberg, 2005)

Younger patients compare to older patient are in bigger risk of depression even though they might be in need of less medical support but are in need of spiritual support due to struggling with the disease in younger age and affect of it in their future life but the mortality among the elderly patient is three to seven times more than younger people. Quality of life has major effects on physical activity improvement and symptoms relief not the age but it is less pointed in older patient. Women compare to men are open to contact and share the disease with the family but men are suffering the depression after the operation. The key features of heart diseases patients are uncertainty, pain and anxiety. Patients are trying to understanding the disease and experienced they have been through can leads to these factors. By encouraging the patient to talk and share their experience, they reclaim the confidence and see the power of the life over the illness. Patient or human being are not a number or documents, so their experience and feeling should be considered. Younger women see the goodness of life with stronger personality and religious faith while admitting the affects of the illness in their life such as isolation, fear of death, depression. Spiritual care is essential part to treat the patients and it is not extra added, spiritual could include religious faith and inner personal strength. Spiritual dimension often is not identified or describe by words due to lack of confidence, time and not being part of medical or nursing curricula. (Santavirta, Råholm, Eriksson, & Lindholm, 2004)

Myocardial can lead to heart failure so we need to explain about heart failure as well. Heart failure is a common disorder, particularly among older people. It is associated with high morbidity and increased mortality. It places a heavy burden on patients, their families and on health care system (Glogowska et al., 2015). Heart failure is a condition in which the heart is unable to adequately pump blood throughout the body or unable to prevent blood from "backing up" into the lungs. Most of heart failure patients have little knowledge of their condition and treatment. Therefore, it is common reason for hospital readmissions, and subsequently, a major contributor to rising health care costs (B. H. Ahmed, Ali, Naqshbandi, & Mohammed, 2018).

Nurses who are specialists in caring for a patient with myocardial infraction disease are senior nurses, whose work begins with the initial diagnosis of myocardial infraction and continues throughout the illness and the caring process. They provide medical, psychological and emotional support during the healing phase and also after the patient's discharge by visiting the patients on a regular basis at home. (Glogowska et al., 2015)

Heart failure places substantial burden on patients, families, communities, and care systems (Baptiste, Mark, Groff-Paris, & Taylor, 2013)

2 Aim of study

Myocardial infarction is a major health problem with high morbidity and mortality, therefor, the aim of this study is to conduct a systematic literature review, in order to gain deeper knowledge and understanding based on new evidence about the rehabilitation after myocardial infarction.

2.1. The research questions

1. What are the factors influencing on rehabilitation process?
2. What is the nurse role in rehabilitation?

3 Background

In the following chapter explains about how the heart functions, and myocardial infarction condition and the complication of it. I will also describe the problem of patient suffering from myocardial infarction and process of rehabilitation.

3.1 Patients motivation

After myocardial infraction, patients are consider about the future, and there will be many questions in their mind such as how the sickness can affects their life, if they can get back to normal life, if they can go back to work and manage daily activities, how it can affects on

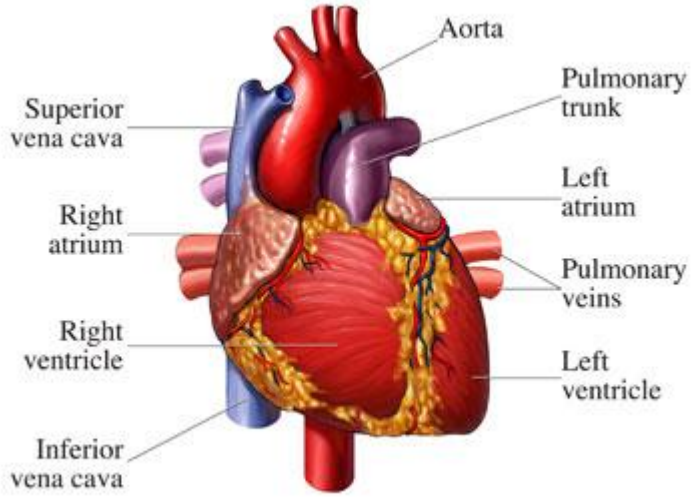
their relationship with families and friends and some also become depress because of all of these reasons. Age and gender are important criteria in myocardial infraction, if patients are younger and female, they are more consider about the future, if their heart is strong enough to become pregnant and carry the baby during pregnancy period and give birth and fear of the death in general, as well as the young men considering about their job and daily activities. As nurse we should be able to give information about their disease and management of it. Planning and following up after discharge, advice the patient to visit their health center after feeling the symptoms and adherence to take the medication, changing life style and participating in group support. (Washburn & Hornberger, 2008)

To motivate the patients to take more responsibility about the diseases and self-managing of it, needs to change it from traditional to patient's motivation and responsibility. Patients will be able to solve the problems in their own personal issue by giving them more responsibility and motivating them. Patient could have achieved the better treatment when they were motivated to follow up the treatment and got information about the disease. Some of the patients had difficulties to follow up the self-care management due to problem learning and understanding the basic theories. In other hand giving to much information and over demanding, not respecting the patient's privacy and not considering the patient's wishes could unmotivated them cause the negative effects on patient's outcome and following up. By not considering the patient as person, this could have developed the barriers between health care givers and patients and lead to unmotivating the patients. It is so important to convince the patients about the partnership between care givers and patients her/himself, that they are part of the decision making about their own health and education they are receiving is to help to improve their health. (Smith, Mitchell, & Bowler, 2007)

3.2 Heart and its function

The heart is a muscle pump that performs two functions: the first, things: 1- Collecting blood with a small amount of oxygen from the body tissue and pumping this blood into the lungs to capture oxygen and release carbon dioxide; 2- Collecting oxygenated blood from the lungs and transferring this blood to all tissues of the body. The heart is located in the thorax, behind the sternum, on the top of the diaphragm and between the two lungs, which occupy the lateral

spaces, called the pleura cavity. The heart consists of four separate chambers. There are left and right atrium responsible for blood collection and left and right ventricle responsible for pumping blood. The pericardium is around the heart. It consists of two distinct but continuous layers separated from a lubricant called a serous fluid. A transverse section passing through the heart shows three layers: epicardium, myocardium, and endocardium. Although the heart is filled with blood, it provides very little oxygen and food for the heart tissue. The artery that supplies blood to the heart comes from the aorta and turns into the left and right coronary arteries. The autonomic nervous system of heart is divided into sympathetic and parasympathetic nervous system. These two systems have opposite effects. In emergencies, sympathetic nerves increase heart rate and force. At rest, the parasympathetic nerves slow down heart rate, decrease contraction power and save energy. (Iaizzo, 2009)



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3.2.1 Myocardial Infraction

Myocardial infraction or heart attack is happening by reducing the blood flow or stopping it to the part of the heart that can lead to heart failure, cardiac failure, arrhythmia and damage the muscle of heart, that could cause high mortality and other complication of heart failure such as infract size, cardiac remodeling, when myocardial infraction is happening it cause the

chest pain lasting for a few minutes in the central or left side of chest radiating toward shoulder, back, neck and jaw. Pathology defined the myocardial infraction due to the lack of the enough blood to the heart muscle and cause the necrosis in muscle of the heart, but it takes time between the two to four hours and not with immediate act. Myocardial infraction divided to two different groups depends on complete or partial blockers, ST elevation myocardial infractions STEMI means complete blockage of one of the arteries that supply the oxygen and nutrition to the heart. Non-ST elevation myocardial infraction means partial blockage, it is similar to angina. Symptoms are tiredness, heart pain or burn, nausea, cold sweet and shortness of breath. Myocardial infraction mostly happens because of coronary heart disease or reduction of blood flow in the heart muscle, it is less common due to obstruction of vessels. It can be diagnosed by blood test, level of the troponin and creatine kinase, electrocardiograms or ECGs. Treatments are including different drugs but as soon as we are suspect of myocardial infraction aspirin could be given to the patient, to relief the chest pain nitroglycerin and opioids such as diamorphine and for breathlessness oxygen to compensate of low level of oxygen, also patients need to use the beta-blockers, aspirin and statins for the rest of their life. Depends to the stage of the myocardial infraction, patients get the different treatments, with low risk has been prescribed with anticoagulant drugs such heparin, and with high risk patients with multiple blockage of coronary arteries are recommended t to do the bypass surgery to open the obstructed coronary artery and restore the blood flow there. Percutaneous coronary intervention and angioplasty are other procedures. (Thygesen et al., 2012)

By increasing the level of the biomarkers such as creatine kinase, troponin and cTn in the blood, myocardial injury can be diagnosed, even though underlaying mechanism is not indicate level of the necrosis through the biomarker's evaluation. Histological records show necrosis of myocardial injury could be associated with non-ischemic myocardial injury which is related to the heart failure. (Lakhani et al., 2018)

3.2.2 Heart Failure

Heart failure is a chronic illness, with wide-ranging symptoms that require daily monitoring and lifestyle adaptation. This syndrome results from diseases impairing the heart's function (Gilmour, Strong, Chan, Hanna, & Huntington, 2014). Heart failure is a clinical syndrome caused by structural and functional defects in myocardium, resulting in impairment of

ventricular filling or the ejection of blood. The most common cause of heart failure is the loss of cardiac function in the left ventricle. However, dysfunction of the pericardium, myocardium, endocardium, heart valves, or large vessels alone or in combination may also lead to heart failure. Some of the important pathogens that lead to heart failure include ischemic disorders, ventricular problems, over-stimulation of neuro-humoral transmission, abnormal calcium cycles, inadequate proliferation and genetic mutations (Inamdar & Inamdar, 2016). Detection of heart failure is often characterized by a careful history, physical examination, and chest X-ray findings. Measurement of serum brain natriuretic peptide and echocardiography significantly improved the diagnostic accuracy. Treatment for heat failure included restoring normal cardiopulmonary physiology and reducing the hyper adrenergic state. Patients with heart failure are prone to pulmonary complications, including obstructive sleep apnea, pulmonary edema, and pleural effusions (Figueroa & Peters, 2006).

3.2.3 Risk factors Associated with Myocardial Infarction

Risk factors are including the, long term smoking, obesity is related to high triglyceride levels and lead to hypertension, hypertensions damage the arteries, drug can cause the spasm in coronary arteries, age men more than 45 and women more than 55 years old, high blood cholesterol when the LDL is bigger than HDL, family history, alcohol consumption, diabetes by increasing the level of sugar, risk of myocardial infraction raise, physical inactivity. Also, psychological risk factor could affect the myocardial infraction such as depression, stress, anxiety, economic and family problems. (Thygesen et al., 2012)

The most common cause of heart failure in older women is hypertension. Heart failure in older men, is often associated with coronary artery disease. Elderly patients experience an increased risk of ischemic heart disease because aging is associated with endothelial disorders, progression of coronary artery disease, and decreased coronary reserve, which can lead to ischemic heart disease. Factors affecting heart failure exacerbation include: myocardial ischemia, uncontrolled hypertension, excess of sodium, excess fluid intake (oral or intravenous), and arrhythmia. It can also get worse by ventricular and atrial fibrillation, bradycardia, Infections (pneumonia, sepsis), anemia, renal insufficiency, pulmonary embolism and chronic lung disease. Such drugs as beta-adrenergic blockers, antiarrhythmic agents, nonsteroidal anti-inflammatory drugs, glucocorticoids and mineralocorticoids can also affect. (Jurgens et al., 2015)

3.2.4 Signs and Symptoms of Myocardial Infarction

Signs and symptoms of the myocardial infarction include shortness of breath, fluid retention, fatigue, and exercise intolerance, nausea (Gilmour et al., 2014). It is characterized by typical symptoms e.g. breathlessness, ankle swelling, fatigue and it is accompanied by signs e.g. elevated jugular venous pressure, pulmonary crackles, and peripheral edema that cause the heart to be unable to provide sufficient oxygenated blood for the tissues. Myocardial infarction is associated with numerous cardiovascular diseases, particularly hypertension, coronary artery disease such as angina(Ahmed & El-Aziz, 2017). Considerable knowledge is required to manage these symptoms, and people with heart failure also need to know when to ask for help. (Gilmour et al., 2014)

Chest pain and shortness of breath are classic symptoms of myocardial infraction, other common symptoms are: fast heart rate, vomiting, nausea, sweating, lightheadedness, pain in the back and jaw. (Erfanian, 2001)

Some of patients has mild pain or not pain and others have severe pain, it is different symptoms for different patients and some just sudden cardiac arrest with no signs but the more signs the more chance to having myocardial infraction. Angina or chest pain is the earliest sign, when the blood flow to the heart is decreased. Sing and symptoms can occur some hours, days and weeks in advance. (McSweeney et al., 2003)

Symptoms in women could be difference, even though symptoms are similar between men and women. One of the symptoms reported one month before the myocardial infraction. There has been some unusual symptoms for women such as tiredness for some days, pain concentrating in center of chest, pain radiating to shoulder and back, pain spreading to jaw and arms also anxiety, shortness of breath, problem with digestion and sleep disturbances. (Soares Passinho, Garcia Romero Sipolatti, Fioresi, & Caniçali Primo, 2018)

3.3 The problem of Readmission

Despite recent development in the treatment of the disease, readmission is a main challenge in the treatment of the myocardial infarction. The impact of myocardial infarction readmission is significant. More than an economic burden, each readmission worsen the survival of patients, associated with repeated hospital stays. Efforts to reduce readmission for myocardial infraction, is the key to success in treatment of the myocardial infarction. Remote monitoring is one strategy to obviously and positively impact readmission rates (Emani, 2017). Readmission of a patient costs a lot and impacts on patient outcomes; it can even double the costs of care. (Felix, Seaberg, Bursac, Thostenson, & Stewart, 2015)

Readmissions have a great financial burden. Myocardial infarction resulting in hospitalization may be associated with cardiac or renal injury that can due to development of myocardial infarction (Gheorghiade, Vaduganathan, Fonarow, & Bonow, 2013). Readmission puts patients at risk for becoming infected, medical errors and it is a general cause of fitness or muscle loss, which is why it is a key performance indicator. Readmission has several reasons: *(1)* discharge very soon before the patient is stable enough, *(2)* discharge to a home or a nursing home that cannot support enough recovery with poor care condition, *(3)* recurrence or worsening of the initial illness due to patient weakness, poor follow-up or just bad luck, *(4*) elderly adults compared to younger adults; women compared to men, patients with lower social and economic status than those with higher levels (Felix et al., 2015). Readmission is valuable to patients, medical providers and healthcare administrators to recognize health system strategies that reduce hospitalization such as patient education, discharge planning, programming follow-up before discharge, communication with outpatient providers and telephone follow-up to reduce the readmissions (Ziaeian & Fonarow, 2016).

3.3.1 Reducing Readmissions

There are high readmission rates for myocardial infarction despite the great advances in management of myocardial infarction. Strategies to reduce early readmission rates are early assessment of exacerbation and monitoring of signs and symptoms in discharge period. It remains to be seen how efforts aimed at reducing 30-day readmission rates will impact long-term outcomes. It is realistic to reduce readmission rates, but this will require that these efforts on a clinician, hospital, and system level be integrated to improve all over outcomes. (Gheorghiade et al., 2013)

Managing congestion	Prevention of congestion is essential to reduce readmission rates.
Systemic hypertension and pulmonary hypertension	Because systemic hypertension can progress to myocardial infarction, management with proper treatment is necessary.
The role of the patient and the family	The patient and patient's family may play a critical role to be a bridge between hospital and home.
A team-based approach	The management of each patient is characterized by the patient profile including purpose of care, cost, and educational history.
Transition of care and post-discharge period	For all patients an early post-discharge visit has been recommended.

(Gheorghiade et al., 2013).

3.4 Nurse's Role in Education of Patient with Myocardial Infarction

Patient education can be defined as the process of improving knowledge and skills in order to influence the attitudes and behavior required to maintain or improve health. Patient education includes all educational activities directed at patients, including aspects of therapeutic education, health education; health promotion and prevention of declaim health status. The goals of education are to help the patient to actively participate in their own care, make informed choices about treatment, health care behaviors and engage in self-care with competence and confidence. Education can make the disease and symptoms more comprehensible and manageable for the patient. (Strömberg, 2005)

Motivating the patients psychologically is a significant factor to prepare them for changes in their life style and adherence to it. It is so important to understand the patient's perspective and involve them in the rehabilitation process, when they feel, they are part of the process and does not need to just follow the certain roles. It motivates the patients when they feel the confidence, that they could manage the rehabilitation process in future when they are able to make decision about it. (Shahsavari, Shahriari, & Alimohammadi, 2012)

Patient education, developing self-management skills, pharmacological along with non-pharmacological management are the keys of initial interventions in the primary care context. Myocardial infarction education topics include weight monitoring, response according to signs and symptoms, medication use and dietary, fluid requirements, and appropriate exercise**.** The aim of self-management support education is to develop confident decision-making skills, leading to self-efficacy belief in the ability to make changes in behavior and improve the health outcomes. (Gilmour et al., 2014)

Patients with myocardial infarction need education in order to adapt to their condition and perform self-care behavior. Despite the fact that many patients received education and perceived information about myocardial infraction, they had low levels of information about their illness. (Strömberg, 2005)

The non-pharmacological treatment like massaging of myocardial infarction patient has been demonstrated to be increasingly important in the last decade. Adherence, compliance and self-care are very important in treatment and management of myocardial infraction. Knowledge about heart performance, myocardial infarction and treatment should help patients to be more compliant and have better self-care. In fact, systematic education has proved to increase patient's knowledge. (González et al., 2005)

Myocardial infarction patients need to be well educated on various aspects of myocardial infarction so that they can be successful in management of myocardial infarction. This will enable them to manage their disease in their home environment. Nurses can play an essential role in educating patients on myocardial infarction self-care. This education enables patients to successfully manage their myocardial infarction at home and minimize hospital readmission (B. H. Ahmed et al., 2018). Management of the patients with myocardial infraction includes providing health education and counseling about sodium limitation, regular body weight monitoring with signs and symptoms of body fluid retention, encouraging regular exercise, fluid intake restriction, smoking, and alcohol cessation**.** Medications are prescribed based on the patient's condition and type of myocardial infarction. Low adherence to sodium diet intake and failure to medications regimen as directed are the two most common reasons for readmissions of myocardial infarction patients to the hospital. Diet teaching is essential to the patient's control of myocardial infarction condition. In addition to diet plan programs, evaluating patients' food sociocultural value assists in making appropriate food choices when

developing a diet plan. Successful management of myocardial infarction patients depend on several important principles including patient controlled signs and symptoms and self-care management such as diet control regarding salt and water intake through peer restriction, drug regimens, daily weights, and exercise plans. The success of the treatment plans is essential to improve outcome and quality of the life (Ahmed & El-Aziz, 2017).

3.5 Myocardial Infarction Education Curriculum

Changing the life style also giving the proper physical program to the patient that will be done minimum twice a week and duration of 45 to 60 min such as cycling, swimming, walking, and group activity. (Piotrowicz & Wolszakiewicz, 2008)

A curriculum for myocardial infarction patients is a multidisciplinary approach to myocardial infarction education and trains the patient to recognize signs and symptoms of myocardial infarction and severity, as well as how to follow up in reaction to these prompts. Recognizing of the early signs of disease is challenging for patients with myocardial infarction. Commonly, older adults think, it gets better spontaneously. As a result, symptoms such as fatigue, difficult breathing or exertion and edema become severe one week before hospitalization. Therefore, teaching patients and families to evaluate and review symptoms is important. Symptoms should be considered daily during activity and non-activity. Evaluation is based on comparing symptoms with those experienced on, the previous day is that the same, better or worse. Daily performing of this event will help the patient apply these affairs at home. Evaluation by healthcare providers to perform myocardial infarction self-care involves knowing physical and cognitive abnormality, sensation of impairments, health knowledge and psychosocial aid. Education to promote self-care, should be based on this evaluation with right care and follow-up after discharge. Healthcare providers should educate patients and family members to evaluate symptoms in activity and rest to compare symptoms to the prior day. Special importance is given to reporting a change in symptom state to the healthcare provider for management of symptoms. This education must be done by nurse and therefore nurse education on myocardial infarction monitoring and management should be done regularly and content of education is included in tools for monitoring symptoms related to myocardial infarction including impact on physical and psychosocial health, medications, anti-

inflammatory drugs, signs and symptoms of failure, to contact a health care provider as signs get worse. (Jurgens et al., 2015)

In order to plan the education, the table below follow the unique of the nursing process emphasis, the planning, the implementation and the evaluation stage:

planing	*implemntation*	*evaluation*
Teaching Objectives for Patients	*Teaching Point for Patient*	*Demonstration of Understanding From Patient*
Identification of signs and symptoms	These are the symptoms to look out for: increasing lower extremity or abdominal edema, decreased activity tolerance, shortness of breath, discomfort while lying flat.	What kind of symptoms did you experience during rehabilitation? What position did you sleep in last night?
How to monitor weight and respond to changes	It is important to weigh yourself on a daily basis to see if you are gaining fluid.	These are your weight in the last 5 days; what do they say to you?
Dietary restriction of sodium	Salt can cause you to retain fluid and cause myocardial infarction to get out of control.	This is what we do for you today; which do you think is better?
When to call the healthcare provider managing heart failur	Some symptoms are warning signs that your myocardial infarction gets worse. It's important to let your doctor know your symptoms before you go to the hospital.	Today, you seem to have a short of breath. What do you do if you have this sign at home?
Managing medication, prescription and nonprescription	The diuretic pill is to remove water; the pill called enalapril is to lower your blood pressure and keep you from retaining fluid.	When you're at home, you just have a few pills. What do you do?
Follow-up appointments	You may be revisited after your recent hospitalization. It is important that you see your doctor shortly after discharge, so your symptoms or problems are discussed.	Which doctors/healthcare providers do you see frequently? Who follows your myocardial infarction? When will you see your healthcare provider?
Activity	It's important to maintain your level of activity, not to weaken your muscles. Your weakness will put you at risk to collapse and fall.	Where do you walk when you are at home? Are there any homework you can take part in?

Staying well: immunizations, alcohol intake, smoking cessation	Illness, alcohol, and tobacco can worsen myocardial infarction.	Did you get any immunizations while you were here? Want a plan to quit smoking and drinking alcohol?

(Jurgens et al., 2015)

3.6 Strategies for Myocardial Infarction Treatment

Patient education about myocardial infarction and strategies for its treatment include many different dietary counseling: sodium and fluid restriction, healthy lifestyle changes like high fiber diet with vegetables; regular exercise in a tolerable amount under monitoring of a cardiac rehabilitation program and also consuming alcohol in moderation and no smoking. Efforts to improve patients' compliance with medical regimens and interventions, such as phone calls, reminders and home nurse, to help patients remember to take the medications, understand the alarming signs and symptoms, such as shortness of breath, excessive fatigue, swelling of feet/ankles, etc, weight monitoring are also an important part of patient education. (Inamdar & Inamdar, 2016)

Arranging follow-up care includes assistance in scheduling the first follow-up appointment. Post-hospitalization along with support of follow-up visits includes documentation of the date, time and location of visit, also sending reminders for subsequent appointments. Home tele-monitoring is a unique approach for transmission of clinical parameters and symptoms of patients with myocardial infarction at home to their healthcare provider, such as weight, blood pressure, heart rate and oxygen saturation. Transition home program helps patients to have a safe transition to home or to another healthcare setting. Nurse assurance program facilitates home service to follow-up on the patients with myocardial infarction. Specialized referral or health centers is designed to provide personalized care to myocardial infraction patients with thorough assessment for heart transplantation needs. (Inamdar & Inamdar, 2016)

Study conducted by Baptiste et al (2013), shows that education program significantly decrease exacerbations of symptoms, emergency visits and readmission for myocardial infarction patients. Adding telephone follow-up for continued assessment and support of the patient's self-care ability can reduce readmissions by 80% and prove to be an effective intervention. By measuring patient self-care capabilities and creating a standard nurse training program that includes mobile follow up can reduce admissions and improve health outcomes. Study conducted by Vedel & Khanassov (2015) is a systematic review based on a literature review shows that home-visiting programs and myelodysplastic syndromes heart failure clinics

reduced all cause readmission and mortality. Study conducted by Ahmed & El-Aziz (2017), in the internal medicine department of Assiut university hospital with total coverage sample elderly patients included 100 patients from both sexes and their age ranged from 60 to 75 years, based on patient interviewing, Atlanta myocardial infarction knowledge test questionnaire shows that medical and nursing teaching program was effective for awareness and adherence of the patients. More follow-up studies are needed to improve awareness and adherence for older adult patients with myocardial infarction to prevent complications. (Ahmed & El-Aziz, 2017).

Study conducted by Glogowska et al (2015), is a qualitative study of multidisciplinary teams with specialist myocardial infraction nurses who show the role of these nurses in providing patients with education and facilitating better communication with doctors when dealing with the management of drug and regimens. (Glogowska et al., 2015)

4 The Theoretical Framework

The Self-Care Deficit Nursing Theory (SCDNT) consists of many conceptual elements and theories that is developed by a theorist named Orem. SCDNT is composed of four theories and eight entities. As a general theory, the SCDNT provides a descriptive explanation of why people require nursing and what processes are needed for the production of required nursing care. The four theories are described here: The self-care theory explains what a person needs and how people care for themselves. The theory of dependent-care tells how a socially independent person is taken care by family members and friends. The theory of self-care deficit describes the limitations involved in meeting requirements for ongoing care and why people can be helped through nursing. The fourth one, theory of nursing systems, provides the structure for examining the actions and knowledge required to assist the person and explains the relationships that must be brought about and maintained for nursing to be produced. The eight entities of the theory by Orem include self-care and dependent care, therapeutic self-care demand, self-care deficit, nursing agency, nursing system and both self-care and dependent-care agency. Orem’s work related to nursing as a practical science and the identification of three practice sciences and three foundational nursing sciences provides

direction for the development of nursing science. Orem's work offers a structure for the organization of existing nursing knowledge and also for the generation of new knowledge. The concepts of therapeutic self-care demand, self-care agency, dependent care agency and nursing agency refer to properties of persons. Self-care system, dependent-care system and nursing system are systems of care that are designed and implemented to achieve desired outcomes. In Orem's theories, the self-care concept is identified that it involves practicing activities people perform to maintain healthy living, continue their personal growth, and preserve their lives. Dependent-care concept is provided for those who cannot afford the needed care to maintain life and healthy performance as well as personal development and well-being. This can happen due to the age of a person or other factors. Self-care request care for treatment concept can lasts usually for a specific time when a patient needs all the necessary care to meet all the care needs. (Alligood, 2017, pp 198-209)

4.1 The Theory of self-care and Myocardial Infraction

An originally stated assumption about self-care is that the patients who are able to recognize their symptoms will be better at subsequent steps in the process. This assumption has now made to be a testable proposition. Other assumptions about self-care that are even more comprehensive include for example that self-care can be learned, all self-care involves decision making, human beings want to feel physically and emotionally well, and people who don't engage in self-care have chosen to behave and act as they do. In the theory of self-care the researcher stated that symptom recognition is the key to successful self-care management. Patient's confidence was told to mediate and moderate the influence of self-care on outcomes. According to the theorist the self-care is influenced by knowledge, experience, skill, and compatibility with values. These propositions were testable, which increases the validity of this theory. Unique factors in each individual patient make changes to maintaining self-care. For example, a patient doesn't personally like taking medicines, which causes taking the medication too rarely. Another patient might think that the changes in dosing don't matter so much and takes the regular medicines only when feeling symptoms. Third individual could have problems with remembering to take the medicines. Fourth person has just gotten a regular medication and doesn't get used to taking them every day. Decisions about self-care may be conscious or subconscious that reflect a person's choices driven by the interaction of person, problem and environmental factors. Among myocardial infraction patients the comorbid conditions impair patients' abilities to differentiate the cause of the

symptoms and impair of self-care self-efficacy. Higher self-care and self-efficacy is associated with better self-care and improved myocardial infarction outcomes. As self-care self-efficacy increases, autonomous self-care behaviors increase as well. Self-care appears to be a linear process proceeding from maintenance, to symptom perception, and to management. Management of symptoms is the highest, most refined self-care behavior requiring the most knowledge and skill. Self-care self-efficacy mediates or moderates the relationship between predictors of self-care. Those are the self-care behaviors of maintenance, symptom perception, management and outcomes. (Riegel, Dickson, & Faulkner, 2016)

5 Method

This chapter will describe the methods of chose and the way applied to achieve the answer for the research question. The ethical consideration of the research will be addressed.

Qualitative Method

This study is systematic literature review. In literature review, in order to find the definitive topic many related literatures are reviewed. In literature review, all the related articles are selected and being read and analyzed for similar content. In order to answer the research questions, related articles should be selected, identified and analyzed. (Cronin, Ryan, & Coughlan, 2008)

A qualitative study often provides more information about the research setting and the context of the study and less information on sampling. Also, because formal instruments are not used to collect qualitative data, there is little discussion about data collection methods, but there may be more information on data collection procedures. Increasingly, reports of qualitative studies are including descriptions of the researchers' efforts to ensure the trustworthiness of the data in systematic literature review. Some qualitative reports also have a subsection on data analysis. There are fairly standard ways of analysing quantitative data, but such standardization does not exist for qualitative data, so qualitative researchers may describe their analytic approach. In

general, qualitative design: Often involves various data collection strategies; is flexible, able to adjust to what is learned during data collection; Tends to be comprehension, efforts to understand of the whole. The goal of most qualitative studies is to develop a rich understanding of a phenomenon as it exists in the real world and as it is constructed by individuals in the context of that world in qualitative studies, data collection and data analysis usually happen together. Qualitative data analysis is a challenge, for 3 reasons: (1) There are no global rules for analysing and presenting qualitative data. (2) Great amount of work is required. Qualitative analysts must organize pages of narrative materials. (3) Little data for reporting purposes. The analysis of qualitative data is time-consuming activity. Qualitative researchers begin with a question about the phenomenon of interest, often focusing on abstract. In the early phase of a qualitative study, researchers select a site and seek to gain data. Researchers collect data, and then analyse and interpret them. (Polit & Beck, 2004, pp 57-61)

5.1 Ethical Considerations

In this thesis, previous literature was read and the principal idea of the authors have been tried to maintain. The thesis has been formed based on university guidelines and modification was done with teacher and noticed to this base that must stay away from plagiarism at all levels of the thesis. Work of existing research done accurately and fairly. The research that is reviewing obeyed ethics questions.

5.2 Literature Review Method (systemic literature review)

Literature review is a summary of the knowledge about the research. Reviewing the literature includes identification, selection, critical analysis, and written description of the information available on the subject. Researchers study literature to develop ideas to determine knowledge of a topic of interest, provide a background to a study, and justify the need for study. (Polit & Beck, 2004, pp 56-57)

Multiple types of literature reviews are traditional, systematic, meta-analysis and meta-synthesis:

Systematic literature review has precise access to reviewing the literature, this type of review is often used to answer structural and specific research questions. In healthcare literature

systematic literature review has been used and is a method of taking large information and a means of contribute to answers the questions about what works and what does not. Systematic literature review focuses on promoting research knowledge. (Norin & Danson, 2015)

5.3 Data Collection

In this systematic literature review the data collection steps are: *(Step 1)* Identification of myocardial infraction and role of nurse in rehabilitation: the central question of this review was: what are the factors influencing on rehabilitation process? And what is the nurse role in rehabilitation? The aspects analysed were, if education is important in myocardial infraction patient, and if they were theory-based, how they were applied the theory of self-care by Orem.

The target population in this study is patients with myocardial infraction. *(Step 2)* The accessed databases of interest through an online search at the Novia University of Applied Sciences and such as PubMed, Scopus, Scholar, Cinahl and Medline. Research words are: 'heart', 'myocardial infraction', 'self-care', 'cardiac patient education', 'quality care', 'nurse role in myocardial'. *(Step 3)* Inclusion criteria are limiting research the published year from 2005 to 2019**.** Information source language is English. Exclusion criteria reviews carry out first by reading abstract to find optional information. Some search literatures required registration for assessment while some were available and free. Exclusion criteria were for example research older than 2005, other publishing languages than English and not scientific publication were rejected. *(Step 4)* Data evaluation: 73 studies were found in these data base and duplicate articles were discarded. Two books are used to explain some definition *(1)* Nursing Research by F. Polit, Cheryl Tatano Beck, 2003. *(2)* Nursing Theorists and their work by Alligood.

Inclusion criteria	Online search at Novia University of Applied Sciences, PubMed, Scopus, Scholar, Cinahl and Medline. Limit the published year from 2005 to 2019**.**	Information source language is English.
Exclusion criteria	Reading abstract to find optional information.	Article were older than 2005, other languages and were not scientific not accepted.

Number of article	73 articles found.	15 studies were used for background, introduction and so on, 16 used for result.
Research words	Heart, myocardial infraction, self-care, cardiac patient education, quality care, nurse role in myocardial infraction.	

Finally, 15 studies were included in this study for my subject. *(Step 5)* Data analysis

5.4 Data of Analysis

In this survey content analysis involves collecting information about a particular topic of interest (rehabilitation after myocardial infarction, nurse role). Information was gathered by search in data base and reviewing studies from valid sources and analysis of the articles by reading the articles many times and marked the similar sentence in each articles and used them in chapter 6 as result. Myocardial infarction is a global health problem. Talking to the patients and educating them is crucial in managing myocardial infarction. Several studies have shown that a well-educated patient showed a significant improvement in lifestyle and self-care management. As a result, these patients have improved and thus reduced the cost of patient care and readmission rates. The way to improve patient ability include monitoring weight, diet and exercise, observing and monitoring body symptoms, observing diet regimens, smoking, and stopping caffeine, and so on. Educating patient by nurse can be effective in improving the disease. The articles has been selected for data analysis are qualitative method, in some of the review in order to answers the questions, result and discussion part of the articles has been read and used. The themes has been selected based on reading the articles and going through them many times. (Waltz, Strickland, & Lenz, 2010)

6 Presentation of Results

In this chapter I answer to the research question, based on what I have learned during the content of analysis.

This section is evaluating the effect of rehabilitation process and nurse role with myocardial infraction patients, regarding patient's quality of life and the rate of readmission. The results are presented in relation to the main research questions of the study in connection with the key themes identified which are; Rehabilitation, nurse role and psychological problems. The subthemes are; monitoring, follow-up, future consideration, changing life style.

6.1 Rehabilitation

Certain action in cardiac rehabilitation to achieve includes the optimal mental, physical and social environment for the patients who are suffering from cardiac condition to achieve the maximal functional capacity. Cardiac rehabilitation should be comprehensive and multifaceted. After the first cardiac symptoms need to follow the life-threatening phase and continues vital checkup, patient accepting his/her condition, reduction the anxiety and emotionally support.

Multidisciplinary team works need to accede the comprehensive goals, not just the physician, and the team includes the psychologist, dietician sociologist and physiotherapist. The therapeutic team give us the goal to plan for individual patients and finding the aim of mental, clinical, social capacity and optimal physical to works on the weaknesses and regain them. Components in comprehensive cardiac rehabilitation are: training activity, changing the lifestyle, educating the patient and family, psychological therapies and optimization pharmacotherapy. Patients with low risk of complication might be hospitalized but depends in their conditions and could be candidate for ambulatory rehabilitation. Monitored by home cardiac rehabilitation under the supervision of ambulatory physiotherapist, physician and using transtelephonic ECG. Period of hospitalization is related to patient condition. In myocardial rehabilitation it is critical to assess the clinical situation of the patient in. Major role is to determine the prognosis by performing the exercise test. Beta-blockers are used for treating the patient, this can be causing the submaximal exercise will be unperformed. (Piotrowicz & Wolszakiewicz, 2008)

Multi professional team include health care center, social worker, physicians, physical therapy, nurses helps to the patients and their families to provide information about the diseases, treatment and process of it. Team is responsible to provide the adequate knowledge for patients, about the risk factors, self-management, importance of changing life style and following up with the patient during the rehabilitation. Following up with the patient, provide group therapy, exercise has essential effects on rehabilitation outcome. (Washburn & Hornberger, 2008)

Rehabilitation is important part of the any disease specially in myocardial infraction, if patients and their families get the information from caregivers group such as changing life style, self-care-management, following up the symptoms and sign, it has effects on quality of life the patients and also in rehabilitation outcome and process. (Otsu & Moriyama, 2011)

6.1.2 Monitoring

Ppatient education programs concentrate on self-care management reduce symptoms for myocardial infarction patient. Daily self-care activities for myocardial infarction patient include weight monitoring, medication regimen and low-salt diet, self-monitoring of symptoms, exercise, and regular physician visits as a result there is need for nurse-guided myocardial infarction patient education with home-based telephone follow-up after hospital discharge. Self-management may also reduce 30-day hospital readmissions**.** (Diana-Lyn Baptiste, 2013)

To assess what is actually achieved with nurse education in myocardial infarction population González et al (2005), did a study and concluded that educating by nurse has changed the self-care behaviours of patients with myocardial infarction in multiple aspects, such as weight and blood monitoring, and increased their knowledge and understanding of illness and treatment. Such aspects require more and more work to get better results. (González et al., 2005)

Myocardial infarction education topics include weight monitoring, response according to signs and symptoms, medication use, dietary and fluid requirements, and appropriate exercise**.** The aim of self-management support education is to develop confident decision-making skills, leading to self-care efficacy belief in the ability to make changes in behavior and improve the health outcomes. (Gilmour et al., 2014)

Patients education able them to independently manage and monitor the symptoms, weights, blood pressure and weight monitoring in their homes. It leads to self-care management and on the other hand, patient's education decreased readmissions and negative result on services, staffing, and programs. (Sterne, Grossman, Migliardi, & Swallow, 2014)

6.1.3 Follow-up

Addition therapies, development of strategies to reduce readmission risk like provide support at discharge, develop communication and early follow-up by educating patient can help to myocardial infarction patient. (Ziaeian & Fonarow, 2016)

Nurse can play an essential role in educating myocardial infarction patient's follow-up. This education enables patients to successfully manage their myocardial infarction at home and minimize hospital readmission. (B. H. Ahmed et al., 2018)

For reducing readmissions and improving understanding of disease processes, educating myocardial infarction patient will be effective. These educating program by nurse during hospital follow-up appointments, may be able to reduce 30-day readmission rates. Nurses should encourage family to be present, evaluate the patient's baseline knowledge, plan teaching meeting at convenient time for patient and family. In addition, this meeting educating should consider current diagnosis of patient and done through all steps of patient care and continue. (Almkuist, 2017)

It is necessary to sense the patient's motivation and adherence to medication by educating them about the effect of the treatment. It is also important to the follow-up the rehabilitation program by effective coping of myocardial infraction patient and inform the participants about their rights. (Salminen-Tuomaala, Åstedt-Kurki, Rekiaro, & Paavilainen, 2012)

In international guidelines the key roles of nurse in the management of the myocardial infarction, in follow-up and monitoring of patients with high risk of hospital readmission is now recognized. Studies show an improvement in the outcome for patients followed by a multidisciplinary care unit where a nurse play as a key role. (Riley, 2015)

Application of teaching program by nurse shows an importantly improvement awareness of patient in patients with myocardial infarction that, led to improvement in their practice and has excess in their adherence. Nursing team in myocardial infarction clinics have a vital role in the follow-up and management of patients. This goal is achieved by permanent teaching, improvement, and assessment of self-care abilities, which include weight monitoring, sodium and fluid restriction, physical activities, regular use of medications, monitoring of signs and symptoms of worsening, and the early seeking of medical help. (Ahmed & El-Aziz, 2017)

Prevention can be in individual or in group for outpatient who are living at home or it can be organized in special facilities under supervision of physiotherapist and physician. The goals are to reduce the risk factors, information and educating the patient, change the life style adherence to medication support mentally and physically the patients. This stage of cardiac rehabilitation starts when the patients' medical sate is not needing to be supervised and will be continued for the rest of the life. Some patients are candidate for ambulatory rehabilitation due

to high risk of physical training, but because of expenses and distance and lack of the health provider it will not be performed. (Piotrowicz & Wolszakiewicz, 2008)

6.2 Nurse Role

Patient education is an important part in myocardial infraction care and should be provided via strategies that are effective and well-evaluated. Otherwise, the education can be waste of time, both for the patient and the health care provider, since received education does not mean that information is absorbed or retained. Patients with myocardial infarction need education in order to accept condition and carry out self-care. Despite that many patients received education about the diseases, they had low levels of knowledge about why they face with myocardial infarction. Myocardial infarction education can improve by combining new technologies such as computer-based education and tele-monitoring. (Strömberg, 2005)

Great number of myocardial infarction patient found that education about myocardial infarction is useful or very useful, along with nurse support. This study explain the contribution made by nurses education and highlights the need for more development and finance in nursing education and nursing support. (Gilmour et al., 2014)

In considering the role of the myocardial infarction specialist nurse, the study by Glogowska et al (2015), identified two areas, the first to communicate with patients, explaining, diagnosing and helping patients to understand the conditions. The study shows that such connection was useful when it had long-term communication with patients and families, and that a specialist nurse also played an important role in achieving these connections. The second was communication within the team. This study highlights the role of the nurses in delivering patient education and facilitating better communication among all physicians, especially in managing comorbidities and drug regimens. (Glogowska et al., 2015)

Nurse has great role by planning for discharge-professional teamwork, communication-timely, clear, and organized information-medication, correlation of social and community support groups, monitoring and managing signs and symptoms after discharge and delivering patient education-follow-up-advanced and palliative care planning. Nurse home visits combined with structured telephone support, and disease management with multidisciplinary myocardial infarction teams had great effect on rehabilitation and decrease all-cause readmissions compared with usual care. Tele-monitoring, telephone support, and pharmacist interventions did not significantly decrease readmissions and negative affects on rehabilitation process. Although nurse home visits were most effective in decreasing readmissions and positive effects

on rehabilitation process, followed by nurse case management and disease management clinics, there was no significant difference in their comparative effectiveness (Ryan, Bierle, & Vuckovic, 2019).

Myocardial infraction, illustrates the role of the nurse as the leader of the myocardial infarction educating program, which, along with other interventions, has a positive effect on hospital remission within at least 30 days after discharge. (Garcia, 2017).

6.2.1 Self-care Management

Educating the patients in myocardial infraction is so important, by education and motivating to self-care management can reduce the side effects and extra expenses on community and patient family if patient is able to monitor the symptoms him/herself, being able to contact with the physician and manage the disease by her/himself. (Piotrowicz & Wolszakiewicz, 2008)

Myocardial infarction patients need to be well educated on various aspects of myocardial infarction so that they can be successful in self- care management of myocardial infarction, this will enable them to manage their disease in their home environment. A number of studies have been conducted regarding guidelines and myocardial infarction management among nurses. (Ahmed et al., 2018)

Self-care in myocardial infarction is relevant to the keep the suitable level of physical and mental well-being, reduced morbidity and mortality, as well as cost of care, increased patient satisfaction, improvement quality of life and self-care is a key problem in the care of persons with myocardial infarction. Self-care efficacy is related to individual responsibility, to achieve the healthy behaviors by self-managing the health condition, that can developed over the years. (Diana-Lyn Baptiste, 2013)

6.2 Psychological Problems

One of the most important treatment for myocardial infraction patients is psychological treatment to understand the new chapter in their life and consequences they need to concern for the rest of their life. There are several psychological factors related to myocardial infraction include: loneliness, stress, anxiety, depression, relationship consideration, responsibilities towards family and job.

Anxiety is state of the danger with fear and unpleasant emotional causing the number of somatic and cognitive changes. Anxiety has great level with myocardial infraction patient such as afraid of serious functioning changes in heart that could lead to death, affect the life quality considering being in danger because of the condition and hospitalization need. Anxiety is one of the risk factors of myocardial infraction coexisting with other risk factors such as high blood pressure, overweight, drug, tobacco and alcohol consumption and responses to reduce life quality that could cause the future reinfraction. Diseases could be identified by patients when they cope with anxiety, it could have positive effects by decreasing the level of the negative emotions, and negative affect on patient's life if they do not participate in rehabilitation treatment and avoid the medication adherence, there will be consequences in future. The common mood of myocardial infraction is depression. if they do not participate in rehabilitation treatment and avoid the medication adherence, there will be consequences in future. The common mood of myocardial infraction is depression. It is clear hospitalized patients are suffering milled to severe depression, most of these patients are those who are going to do the angiography and other kind of the operation, they are worried about the somatic changes and disorders, that might happen in the future and recovering after the procedure. Patients with severe depression and anxiety are in bigger risk of suffering the sphere of mental functioning and having the problem to deal with myocardial infraction consequences and have negative affects. Decrease the severity of depression and anxiety symptoms is part of the psychological support for myocardial infraction patients. Some of the patients has stop following up the rehabilitation program due to the severe of the anxiety and depression, in other hand some of the patients decrease the symptoms of anxiety and depression by excessive using of participating in psychological support and continued the rehabilitation programs and decrease the consequences of the diseases. (Mierzyńska, Kowalska, Stepnowska, & Piotrowicz, 2010)

6.2.1 Future Consideration

Myocardial infraction patients are facing the stressful and psychological conditions such as depression, death, relationship problems and anxiety and physical conditions such as energy loss, ability of daily activities and managing the work. Patients might experience the loss of power in their life by changing the lifestyle and feeling anxious by giving up the old habits. Coping ability and understanding the situation in myocardial infraction patients has an effect on rehabilitation progress. There are two type of coping strategies, problem-focused to solve

the problem and conversion of the situation and emotion-focused adjust the emotion that make the situation happened. The women different stages of coping process are containing; patterning balance, surviving and originating. First stage patterning balance is about the doubt and problems linked to myocardial infraction, majority of patient accept sickness is part of their life, but some cannot accept it and wish for more support. Second stage surviving is talking about isolation, value of their life and relationship, emotional confusion and physical disorder. Third stage originating is about the new perspective in the life and living their live by making a new pattern. Another important context of coping is coherence, it means life is valuable, has goal and meaning. It is important factor for patients to recovery after myocardial infraction to understand the sickness. Coping process has major effect on patient's futures view. (Salminen-Tuomaala, Åstedt-Kurki, Rekiaro, & Paavilainen, 2012)

They lost their hope, six dimensions of hope are; temporal, Feeling positive, affiliative, contextual cognitive, behavioral. These dimensions are related to the outcomes, for example physical, religious action, psychological and social are part of the behavioral dimension. After the myocardial infraction, group of the men and women had problem with changing life style, mental and financial situation, family and friends, job and medical condition. They were experiencing the different symptoms after the discharge during the first month such as pain in the chest, tiredness, short of the breath and lack of the confidence about the future of their relationship, job and other complication that could happen considering their health. Patients were disappointed with information they got from the physicians even some women have not gotten any information about cardiac rehabilitation. Wanted to plan their future about their job and have conversation with physicians so they will be aware, what kind of activity they are able to do and what not to do. (Kristofferzon, Löfmark, & Carlsson, 2007)

6.2.2 Changing Life Style

The number of deaths due to myocardial infraction is reducing but in order to prevent future myocardial infraction, a strategy is needed. Changing in life style such as stop smoking, nutrition and exercise are the plan for the patients but lack of knowledge and adherence in long term has been the problem to achieve and maintaining the goals for myocardial infractions patient. Cardiac rehabilitation based on exercise shows the benefits of 12 weeks

exercising or longer period for the patients. It shows long terms physical activity are helping to the rehabilitation but due to not having long term supervision patient has not followed the program and had the contradictory result. (Gregory, Bostock, & Backett-Milburn, 2005)

The women and men who are suffering from the myocardia infraction adjust the fact that their life and health has changed, it can also affect themselves and their families, in order to continue their life, and they need to change life style, control the symptoms and do the exercise. In order to change the life style, patients need emotional support and get the chance to share the experience from people who has been suffering the myocardial infraction. Patients wants to be able to have normal life again, so they are able to communicate with their partners and families. Understanding the patient's effect significantly their health and recovery after the myocardial infraction. There has been positive part after the myocardial infraction as well such as; set the new goal in their life, having better relationship with their partner, changing life style in healthy way, having other chance to enjoy the life, the importance of life and not putting the job as priorities and women became aware of their values. (Kristofferzon, Löfmark, & Carlsson, 2007)

Life threating myocardial infraction starts immediately with hospitalization. The management goals are evaluating mental and clinical status, information about the diseases to the patient, what are the treatments and risk factors, encourage the patient to exercise and consequences of immobilization. Depends on severity of infraction, active physical rehabilitation can initiate under supervision of the physiotherapist after 12-148 of bed rest.

Physical rehabilitation is an important component of comprehensive in cardiac rehabilitation. Until 30 years ago less activity and bed rest for majority of the patients were considered beneficial but now intense working out in known as prevention and also therapeutic for the patient.

Exercise and movement of small muscles, breathing and relaxation are including the initial phase. Continuation phase are including standing up, exercise of larger muscles and sitting, patient could have major activity such as climbing the stairs with help of the physiotherapist. Electrocardiographic is performed during the first day of infraction by monitoring the heart rate and blood pressure before and after the exercise. After

any sign of irregular heart rate, short of breath and pain in the chest should stop the exercise immediately.

Changing the life style also giving the proper physical program to the patient that will be done minimum twice a week and duration of 45 to 60 min such as cycling, swimming, walking, and group activity. (Piotrowicz & Wolszakiewicz, 2008)

7 Discussions and Critical Review

This chapter contains interpretations and discussions of the method used, the results and a conclusion. This study will be reviewed critically by looking into the reason for the study, it is credibility, the method of collecting data as well as analyses. The topic of this study is ‘rehabilitation after myocardial infarction, nurse role‘.

7.1 The Use of the Method

Polit and Beck (2004, p 57), explain how Lincoln and Guba proffers four criteria which are: credibility, dependability, confirmability, and transferability used to check the trustworthiness of the data used in the study. (Polit & Beck, 2004, p 57)

Credibility refers to claim in the precision of the data collected and analysis of it and explain why things have been done, they, they were done. Dependability and credibility are in same group. Therefore, dependability requires a consistent approach that results in accordance with data protection. Confirmability is the neutrality or degree finding responded was, by eliminating. Personal motivation and bias. Transferability includes the changing to other contexts such as settings or people, when in study the findings are relevant. (Polit & Beck, 2004, pp 41-42)

I have read all the articles then analyzed them and found the themes and subthemes for my result. Dorothea Orem’s theory was found suitable for this work.

I think that this study could be useful for anyone of interest, and for students of nursing, and public health care.

7.2 Discussion of Results

This section discussing about aim and background of the study, the research finding and their connection to the theoretical framework. The theorist is Orem and I have explained in theoretical framework, why I have chosen her as the theorist. It is a systematic literature review and the questions has been answered in result section by doing the data analysis of the several articles. Key themes in this study are; Rehabilitation, nurse role and psychological problems. There are different criteria should be considering by nurse as educator and patient as receiver of the education, if the nurse dose not guide patient and explain the information to the patient, the whole program will be useless and this lead to effect the patient well-being and extra costs and time for health care system and prolonging the rehabilitation process.

7.3 Conclusion

Myocardial in fraction is a disease that have an important social burden. Patient education concentrate on self-management and therefore modification of life style is necessary. In the delivery of patient education, nurses play a key role. In self-care management, education of awareness on symptoms, weight monitoring, dietary advice, medications and activity are important. Self-care education should be part of the daily management of myocardial infarction patients. The process of training the patient and their family, starts at hospital. The days following are very useful to realization and evaluating the patients and their families. The early planning, which includes daily visits to evaluate and augment, give the patients and their family support and focus the diagnosis of signs and symptoms. The key roles for the nurse in the management of myocardial infarction have concentrated, on the follow up and monitoring of patients and educate patient and their family to plan self-care and to change the life style and follow-up the rehabilitation programs. From the results of evaluated studies in this literature review, it is not clear whether nursing education has a powerful definite effect on outcomes of patients with myocardial infarction, such as quality of life, rate of mortality, readmission rates and the efficacy of educational programs in improvement of patient's self-care, low risk of complications revealed. It was cleared that patients' health capacity was improved through patient educating. Education programs and their progress require appropriate planning and specialized nursing. This procedure includes the training, augmentation, improvement and assessment of self-care abilities, which involves monitoring of weight, sodium and/or fluid restriction, physical activities, proper use of medications, monitoring of signs and symptoms

and the timely finding of medical help. Patients who modify their lifestyle such as exercising, quit smoking, reducing fluid and sodium intake indicated an improved health level. In summary, all over study shows a positive effect of patient educating on myocardial infarction patients to increase self confidence in self-care management and change lifestyle that lead to well-being. Patient education is an important part in myocardial infarction care and should be provided via strategies that are effective and well-evaluated. Otherwise, the education can be waste of time, both for the patient and the health care provider, since received education does not mean that information is absorbed or retained. In the end, it should be noted that, the education can be waste of time, for both patient and nurses, if received education is not learned and maintained.

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Appendix 1

The articles over review

Name of the articles	***Author***	***Year***	***Aim of the articles***	***The main result***
The crucial role of patient education in heart failure.	*Strömberg, A*	*2005*	*Assess the level of knowledge of heart failure patients, learning barriers, needs, educational methods, purpose and effects of education on patient.*	*Patient education is an important part of heart failure care.*
Managing patient with heart failure.	*Glogowska, M., Simmonds, R., McLachlan, S., Cramer, H., Sanders, T., Johnson, R., . . . Purdy, S.*	*2015*	*Survey the understanding, and experiences of heart failure nurses when caring for the management of heart failure patients.*	*The study highlights the role of specialist heart failure nurses in present education to patients and better connect among all clinicians.*
A Literature Review of Heart Failure Transitional Care Interventions.	*GARCIA, C. G.*	*2017*	*Evaluate the efficiency and harm of transitional care to decrease readmission and mortality rates for adults with heart failure.*	*Readmission and mortality declined by home-visiting programs and heart failure clinics.*
Nurses 'Knowledge regarding heart failure education principles in Erbil teaching hospital.	*Ahmed, B. H., Ali, S. S., Naqshbandi, V. A., & Mohammed, R. A.*	*2018*	*Consider nurses' knowledge about treatments that can be educated to heart failure patients to better self-care.*	*Nurses have good knowledge grade, but there is a need ongoing knowledge and practical training to educate patients about heart failure.*
A nurse-guided patient-centered heart failure education program.	*Baptiste, D.-l., Mark, H., Groff-Paris, L., & Taylor, L. A.*	*2014*	*Educational strategies to diminish heart failure readmissions and improve self-care management.*	*Patient education programs concentrated on self-care management reduce symptoms and readmissions for heart failure patients.*
Primary health care nurses and heart failure education.	*Gilmour, J., Strong, A., Chan, H.,*	*2014*	*Knowing nurses heart failure educational activities (length and*	*Health care nurses in chronic illness education and highlights the need for development and investment in*

	Hanna, S., & Huntington, A.		*repetition, topics covered, resources used and strategies for ethnic groups).*	*heart failure nursing education and support them.*
Key Roles for the Nurse in Acute heart failure Management.	*Riley, J.*	*2015*	*Concentrates on admission for heart failure patient and discusses the involvement of nurses in reach an efficient heart failure service.*	*The key roles of nurse in the management of heart failure in follow up and monitoring of patients at high risk of hospital readmission.*
Effect of medical and nursing teaching program on awareness and adherence among elderly patients with chronic heart failure in Assiut.	*Ahmed, S. M. K., & El-Aziz, N. M. A.*	*2017*	*Assess the efficacy of medical as well as nursing teaching program on knowledge and adherence among elderly patients with heart failure..*	*The medical and nursing teaching program was effective for awareness and adherence of the patients.*
Using Teach-Back Method to Prevent30-Day Readmissions in Patients withHF: A Systematic Review.	*Almkuist, K. D.*	*2017*	*Consider the current evidence on using education during patient education to prevent 30-day readmissions among patients with heart failure.*	*Reduction in readmissions withusing the teaching method of education.It can have a positive effecton health outcomes, self-care, andincreasing knowledge.*
Nurses' Knowledge of heart failure: Implications for Decreasing 30-Day Re-Admission Rates.	*Sterne, P. P., Grossman, S., Migliardi, J. S., & Swallow, A. D.*	*2014*	*Evaluate nurse's knowledge of heart failure.*	*Nurses get knowledge from the educational program to care their patients and after this, the readmission rate for heart failure patients decreased. Better care may improve patient's self-management of heart failure, reduce hospitalizations, decrease costs, and finally improve quality of life.*

The Three Rs for Preventing heart failure Readmission:Review, Reassess, andReeducate.	*Ryan, C. J., Bierle, R. S., & Vuckovic, K. M.*	*2019*	*Reduce readmission.*	*Nurse home and disease management with multidisciplinary teams decrease all-cause. Tele-monitoring, telephone support, and pharmacist interventions did not significantly decrease readmissions.*
Coping experiences: a pathway towards different coping orientations four and twelve months after myocardial infarction—a grounded theory approach	*Salminen-Tuomaala, M., Åstedt-Kurki, P., Rekiaro, M., & Paavilainen, E.*	*2012*	*To create a substantive theory on myocardial infarction patients' coping as a continuum.*	*Importance of recognizing the patient's depressive state of mind and the psychological aspects which affect family dynamics and family has great eefects on rehabilitation.*
Cardiac rehabilitation following myocardial infarction.	*Piotrowicz, R., & Wolszakiewicz, J.*	*2008*	*Recommendations regarding cardiac rehabilitation after myocardial infarction*	*Nurse should arrange the propper physical activity for the patients.*
Managing consequences and finding hope–experiences of Swedish women and men 4–6 months after myocardial infarction.	*Kristofferzon, M. L., Löfmark, R., & Carlsson, M.*	*2008*	*The aim of the study was to describe the experiences of present everyday life of women and men after myocardial infraction and their expectations for the future.*	*The patients experience of positive consequences, chan- ges in life values and hopes for the future with regard to their myocardial infraction are described in this theme.*

Recovering from a heart attack: a qualitative study into lay experiences and the struggle to make lifestyle changes.	*Gregory, S., Bostock, Y., & Backett-Milburn, K.*	*2005*	*To identify views and experience of people recovering from myocardial infraction, specially barriers to and facilitators of following advice about lifestyle change and maintenance.*	*Long on-going monitoring and support that goes beyond has negative and positive effects on changing life style.*
Psychological support for patients following myocardial infarction.	*Mierzyńska, A., Kowalska, M., Stepnowska, M., & Piotrowicz, R*		*Principal psychological problems in patients following myocardial infarction*	*The psychological problems encountered during cardiac rehabilitation may considerably in- terfere with recovery and reduce the motivation to undergo treatment and comply with the doctor's directions*