



**Health promoting interventions for patients with
coronary artery disease**
A Nursing Perspective

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Health promoting interventions for patients with coronary artery disease

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Abstract

Coronary artery disease is a life-threatening disease and it triggered by the reversible mismatch between the myocardial oxygen demand and supply that shows the myocardial ischemic. People suffering from coronary artery disease should engaged themselves in lifestyle changes such as diet and participate in physical activities and exercise. cardiovascular disease can be prevented by addressing the risk factors such as tobacco use, un-healthy diet, obesity, lack of physical activities

The aim is to explore the literatures handling nurse's method in promoting the health of patient with coronary artery disease.

The literature review was conducted where data were retrieved from Cinahl, PubMed and Medline databases. Seven articles were retrieved and analyzed using inductive content analysis approach. Three themes were identified for nurses' method to promotes the health of coronary artery disease patients, which are: patient education, motivates lifestyle changes, physical activities, medication adherence and nursing intervention.

In conclusion, It was found that the method uses by nurses to promotes the health of coronary artery disease patients are patients education, counselling, motivation and the help to promote physical activities and improve lifestyle changes. The drug therapy by nurses decreases the systolic blood pressure and LDL cholesterol and improve the quality of life of patients with coronary artery disease

Keywords/tags (subjects)

Coronary artery disease, patient education, physical activities lifestyle, nurses.

Miscellaneous (Confidential information)

For example, the confidentiality marking of the thesis appendix, see Project Reporting Instructions, section 4.1.2

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1 Introduction

“Treatment without prevention is simply unsustainable” Bill Gate

About 17.9 million people died from cardiovascular disease in 2019. Thus 85% of the deaths recorded are due to heart attack and stroke. (WHO 2021). Over the past decades in Finland age-standardised death from coronary artery disease has decreased. In 2020, about one in five deaths in men and one in eight deaths in women are caused by coronary artery disease which make an estimate of 8,600 people died of coronary artery disease. (Kaypahoito 2022). In general, cardiovascular disease can be prevented by addressing the risk factors such as tobacco use, unhealthy diet, obesity, lack of physical activities and if detected early, it can be managed with counselling and medication. (Faroughi et al. 2021, 216-222).

Coronary artery disease decreases the quality of life, causes death and expensive healthcare cost. The reduction of the risk of this chronic disease has been taking into consideration due to primary preventive measures and counselling program from coronary care nurse in the hospital. (Luo et al. 2018). It important for patients suffering from any cardiovascular disease to engage themselves in lifestyle changes such as change in their diet and engaged in physical activities (La Sala et al. 2017, 22-30).

The aim of this literature review is to explore literature handling nurses' methods to promote health of patients with coronary artery disease and the purpose is to gain insights of the care of coronary artery disease patients from the nursing perspective and create awareness of preventive measure and intervention in the care of coronary artery disease

2 Prevention and treatment of Coronary artery disease

2.1 Coronary artery disease

Coronary artery disease happens when the arteries that supply blood to the heart muscle, the myocardia, become hardened and narrow. This happens because of the build-up cholesterol and other fatty materials which forms the plaque. The build-up of plaque and narrowing the artery walls is known as atherosclerosis. As the plaque grows, it causes less blood flow through the arteries and therefore, the heart muscle cannot get enough blood and oxygen supply. (National Heart, Lungs, and Blood Institute 2016).

Coronary artery disease is either stable or unstable, the stable coronary artery disease is the beginning of transient centre chest pain and unstable is when the chest pain worsens which is known as angina pectoris, it mostly starts during exercise, emotions, or stress. The coronary artery disease is triggered by a reversible mismatch between the myocardial oxygen demand and supply that shows in the myocardial ischaemia. (Sundeeep M et al. 2016, 31-49).

Heart attack can happen when there is a blood clot, and the cut off the blood supply to the heart. When the coronary artery disease weakens the heart muscle. This can lead to heart failure and arrhythmias. The heart failure is when the heart cannot pump blood well to the rest of the body and Arrhythmias is when the heart rhythm changes (National Heart, Lungs, and Blood Institute 2016)

Coronary angiography is the invasive test that is used to diagnose the present and absent of coronary artery disease. This procedure is done by inserting a special shaped catheter into the coronary artery system under fluoroscopic x-ray guidance. (Brady et al. 2014, 232).

2.2 Prevalence & causes of coronary artery disease

Coronary artery disease is the main cause of cardiovascular morbidity and mortality in the world with about 7 million deaths recorded annually. (WHO 2021). The prevalence of coronary artery disease increases with age, and according to research, about 14% of people who are above 80 years of age and who have the history of smoking and dyslipidaemia with Atrial Fibrillation have the tendency of common vascular risk factor. Patients with Atrial Fibrillation have the tendency of prevalence of comorbid condition of coronary artery disease compared to the general population. However, 17% to 46% of Atrial Fibrillation patients have a concurrent coronary artery disease and it is estimated that 6% to 21% of patient with myocardial infarction will develop Atrial Fibrillation which can result to coronary artery disease. (Al- Makahamreh et al 2021. 1-10)

According to McCullough, about 70% of people with coronary artery disease have the classification of a particular coronary atherosclerosis. Prevalence of coronary artery disease has increased in the past three decades from 1.1% to 7.5% in the urban population and in the rural population, is about 2.1% to 2.7%. (McCullough 2007. 611-616)

2.3 Treatment of Coronary Artery Disease

The main treatment for coronary artery disease is lifestyle changes which may include, regular physical exercise. Overweight and obesity are well known as risk the factor for coronary artery disease patient. However, there are some treatment therapies that have been proven to decrease the rate of mortality, such treatment are aspirin, adrenergic receptor blocker (BB), angiotensin - converting enzyme inhibitors (ACEI) and finally the 3-methylglutaryl CoA reductase inhibitors. Coronary artery bypass graft has improved the treatment of coronary artery disease compared to the use of medication. (McCullough 2007. 611-616).

Most importantly, patients' education improves the prevention of coronary artery diseases. Therefore, nurses should educate and counsel patients with cardiology conditions such as acute myocardial infarction, acute heart failure and ventricular arrhythmias. (Sundeeep M et al. 2016, 31-49).

However, nurses motivate and encourage patients to seek primary health tips, medical advice, and healthy diet such as low salt and low-fat diets, avoiding smoking, alcohol consumption and weight gain. Participating in health counselling and regular exercise can reduce the risk of cardiovascular disease. (Luo et al. 2018). Coronary artery disease patients should control hypertension and serum lipid, blood glucose level as well. (Kohsaka et al 2021. 1919-1927).

Besides anti-ischaemic agents, there are other ways to treat coronary artery disease such as the revascularisation process which is the process of restoring perfusion to ischaemic myocardium, that may affect the improvement of a patient's condition, and the revascularisation could play a big role in symptom amelioration. (Sundeeep M et al. 2016, 31-49).

Self-Management of Coronary Artery Disease

Self- management is important in chronic disease prevention, and the intervention is to practice the lifestyle changes, blood pressure control and self- management behaviour. Among all, the theory based self- management educational intervention plays an important role in effective secondary prevention of coronary artery disease. The secondary prevention strategies are the education about regular exercise, monitoring blood pressure, patients support, and risk factors control. (Kohsaka et al 2021, 1919- 1927)

In self-management with coronary artery disease patient, it important that the nurses should be aware of the educative method that is implemented through the hoc training, with this training, the nurses will be able to educates coronary artery disease patients of early warning signs, symptoms of the disease and self-management psychologically. In other to improve the knowledge of care and the principle that support patients with cardiovascular disease, it is important for the patients to also carry out their own self-care. (Piepoli et al. 2016, 2315-2381).

The health care professional focuses on the patient bio-clinical dimension, but it essential to understand the self-management education, as well as the psycho-educational relation aspect. (La Sala et al. 2017, 22-30). However, about 42% of nurses provide self-management education to chronic patients with diseases like diabetes, COPD, Hypertension, Obesity, Asthma, and ischemic heart disease while 58% of nurses concentrated on the aspect of bio clinic nature. (La Sala et al. 2017, 22-30).

2.4 Preventive and acute intervention

Nurses caring position as an educator and counsellor has been very helpful in creating an awareness for patients to know the high therapies involve in treating acute coronary syndrome. The nurses encourage the use of medication in other to ensure improvement in their health and safety outcomes (Ramadhani et al, 2019).

Additionally, the goal of nursing to discharge a coronary artery disease patient so that they can be prepared to resume back to normal life activities which involves understanding the importance of lifestyle changes, risk factor and risk reduction such as nutrition, diet, smoking, weight management, and physical activities. (Ramadhani et al. 2019)

However, for more than two decades, nurses have taken the main role in managing multiple and single risk factor for coronary artery disease patients which includes diabetes, lipids, smoking control, and hypertension. More so, there are specialized clinics and program in primary care, such as cardiac rehabilitation for heart failure and coronary artery disease patients. (Ramadhani et al. 2019).

The intervention of nurses has shown improvement of medication compliance, healthy lifestyle, and the reduction of LDL- cholesterol for patients with coronary artery disease. (Luo et al. 2018). The educational activities the coronary artery disease patients receive from nurses, the continuous inspection, and a longer duration of personal counselling with nurses than doctors have also shows positive result to patients with long term coronary artery disease. Nurses have a major role in strengthening and motivating patients to make changes and to adopt a healthy lifestyle. (Micháková et al. 2016,135-140).

More so, the nurses educate patients about their own risk behaviour and give a vital information that will improve their lifestyle changes which includes an active promotion of non- smoking intervention. Although, the educational work and the motivational encouragement given by the nurses are mainly responsible for the long-term success of preventive measures. In general, the activities that can contribute to the success of the prevention of coronary artery disease can be implemented by general nurses. (Michálková et al. 2016, 135-140).

Another prevention is the nurse led care, which is an effective measure in reducing drug-treated cardiovascular disease risk factors and improving the quality of life of the patients with coronary artery disease. There are some nurse programs that address healthy lifestyle, drug treated, risk factors and medication adherence, patients with cardiovascular care are seen by registered nurse with experience in cardiovascular care and training in motivational interviewing. (Minneboo et al. 2017, 318-327).

3 Aim And Purpose and Research question

Aim: The aim of this literature review is to explore literature handling nurses' methods to promote health of patients with coronary artery disease.

Purpose: To gain insights of the care of coronary artery disease patients from the nursing perspective and create awareness of preventive measure and intervention in the care of coronary artery disease patients.

Research question: "What are the nurse's methods in promoting the health of CAD patients?"

4 Method

4.1 Literature Review

Literature review is an academic search knowledge that are built on pre-existing work, and they also advance the knowledge of reviewing relevant literature. Literature review analyses and synthesizes related literature of the topic chosen for the thesis. (Xiao & Watson. 2019, 93-112).

Literature review is suitable for this thesis because it justifies why the work is important for healthcare practice. This bachelor thesis was based on literature review because there was need to put together different studies to analysed and organised findings around the topic of nurse's method in promoting the health of coronary artery disease patients.

4.2 Scientific article selction process

The article search was executed in three datbases, PubMed, CINAHL, and Medline. In the process of selecting from the three mentioned databases, keywords were used to find the most relevant articles for this thesis topic (Table 1).

Table 1. Keywords used in the research process

KEYWORDS
Coronary artery disease OR cad OR coronary heart disease
Nurse OR nurses OR nursing
Prevention OR Intervention OR treatment OR program

This searching process was conducted between June and July 2022. The inclusion criteria were used in searching for relevant data. First, the keywords were entered to check the number of article available on the searched topic, then limitations were set to meet the most relevant articles for this thesis. Limiters used were full text, reference available, publication dates, English language, see table 2.

Table 2 inclusion criteria

Inclusion criteria
Article answer the research question
Study is in English Language
Scientific publication, empiric studies
Free full text access on Jamk student
Study of nurse method and promotion, prevention, and intervention for patient with coronary artery diseases.
Publication year 2016-2022

The combination of keywords and synonyms, the following. First, entered keywords “coronary artery disease”, “nurse’ promotion”, “prevention”, “intervention”. (See Table 1). Secondly, limited from 2016 to 2022. Finally, the use of boolean terms, peer review, full text and entered in English language. (See table 2).

In Cinahl, PubMed and Medline database, 153 articles were searched, after removing duplicate articles, 129 articles were relevant and after reading the titles of each relevant article, only 20

were relevant titles, proceed to read each abstract, only 7 articles of full text were considered to answer the thesis question, which make to total of 13 articles were eliminated because it did not answer the thesis question. (See figure 1)

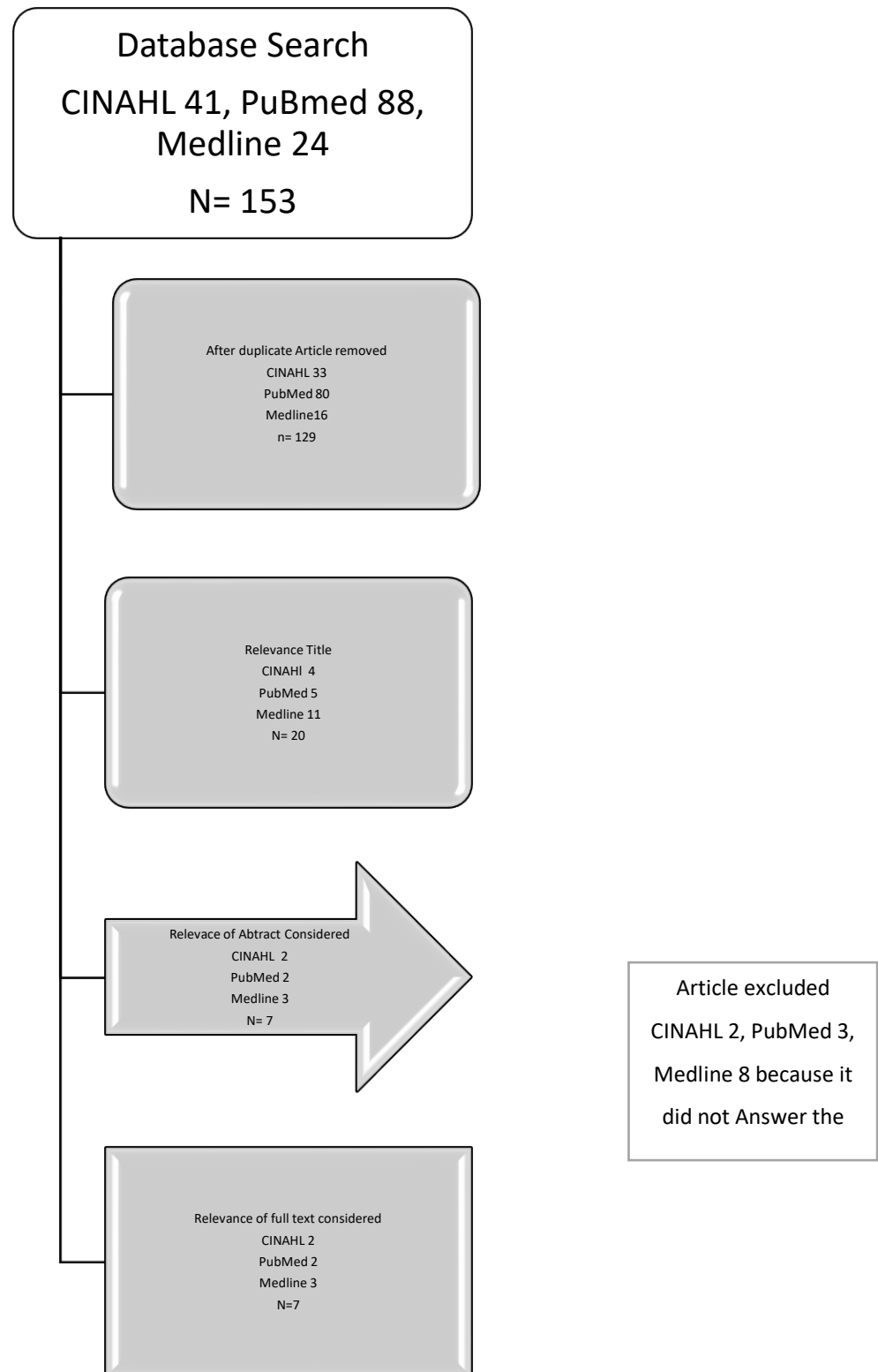


Figure 1. Article search process

4.3 Method of Analysis

Content analysis has been in the use of health studies research longer than just during the recent years. Content analysis is a flexible method for analyzing text data (Hsieh & Shannon 2005). According to Hsieh & Shannon, content analysis is the research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns. Content analysis offers researchers a flexible, pragmatic method for developing and extending knowledge of the human experience of health and illness. (Hsieh et al. 2005). In context, content analysis was chosen for this thesis method of analysis. According to the content analysis, it requires a similar analytical process of five classic steps, including formulating the research questions to be answered (See figure 2) (Hsieh & Shannon. 2005).

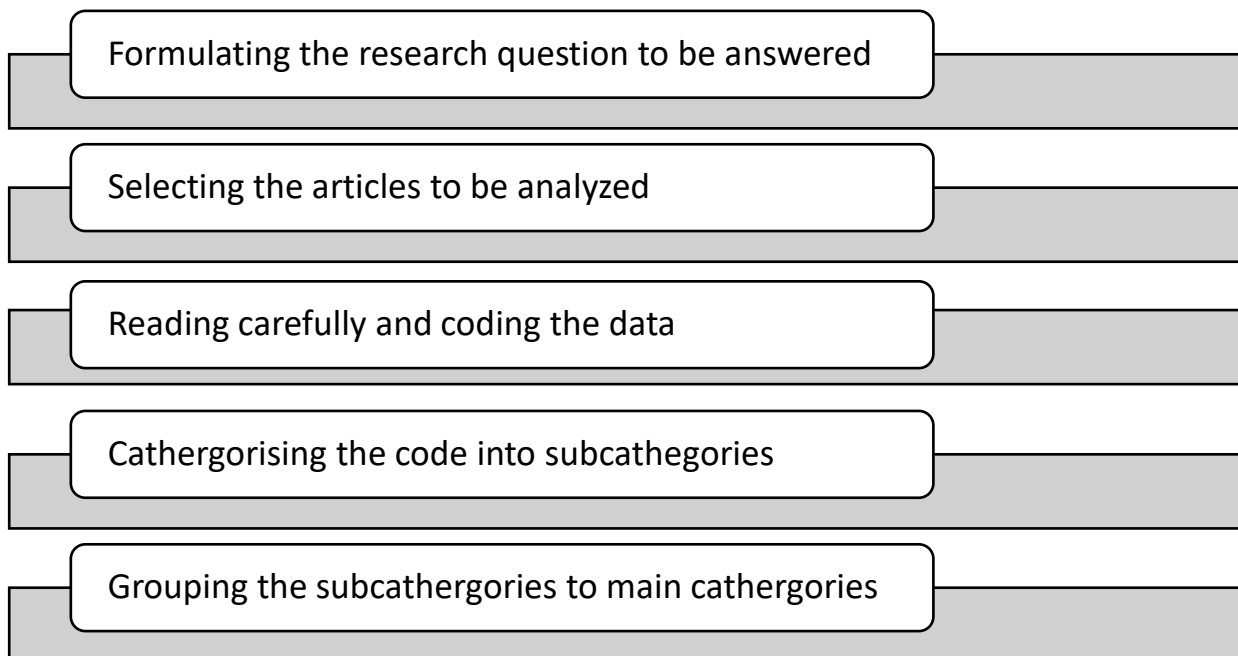


Figure 2 The five main steps within the process of content analysis. (Hsieh & Shannon. 2005).

After articles had been selected, the data set was acquainted by reading the articles repeatedly and then select the article, and uses of notebook to take down some point and a word document was also use to highlight ideas. Content analysis was used to analyse findings, the coding was reading the articles several times, and the answer for the research question of this thesis was found in the result of each article, then findings were coded, and then started categorising and forming sub and main category. (Elo & Kyngäs 2008). (see figure 3)

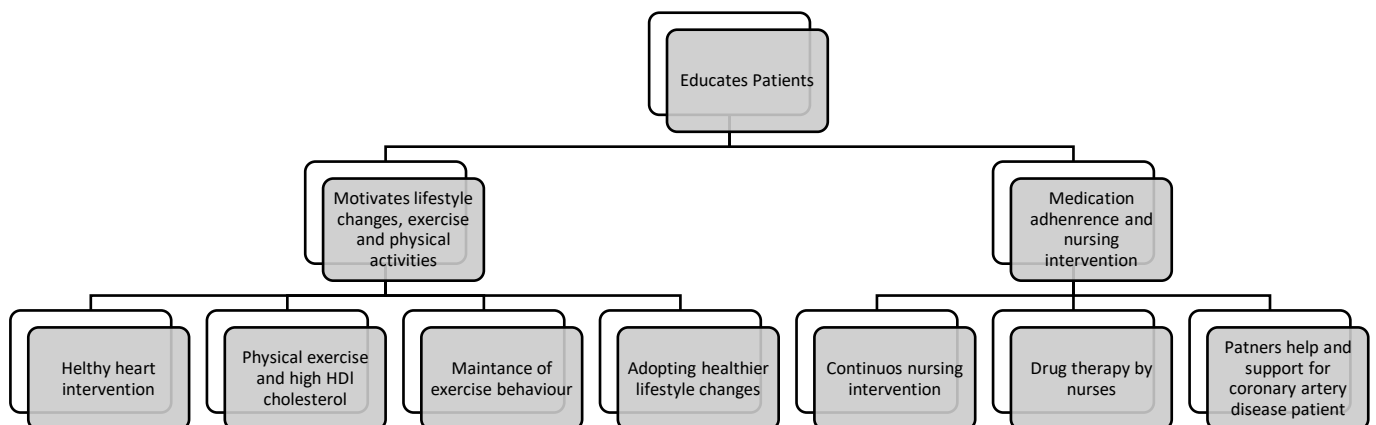


Figure 3. Data analysis process

5 Results/Finding

The articles used in this thesis were critically analysed to ensure that the result of the findings answer the research question and the purpose of the study. However, each articles explained the matter in different ways, after the analysis, three methods were identified. These are Educates lifestyle changes for coronary artery disease patients, motivates lifestyle changes and nursing intervention and medication adherence (see figure 4) are factors that nurses use in promoting the health of coronary artery disease patient and was described in three main categories and eight sub-categories

Nurses' method in promoting the health of coronary artery disease patient is needed in the coronary artery disease ward because coronary artery disease is a serious disease and lots of patients suffer from this disease. (Shing Kwok et al. 2020, 78-83).

The articles (N=7) used in this thesis were published in the year, 2016(2), 2018(1), 2020(1), 2021(2), 2022(1)

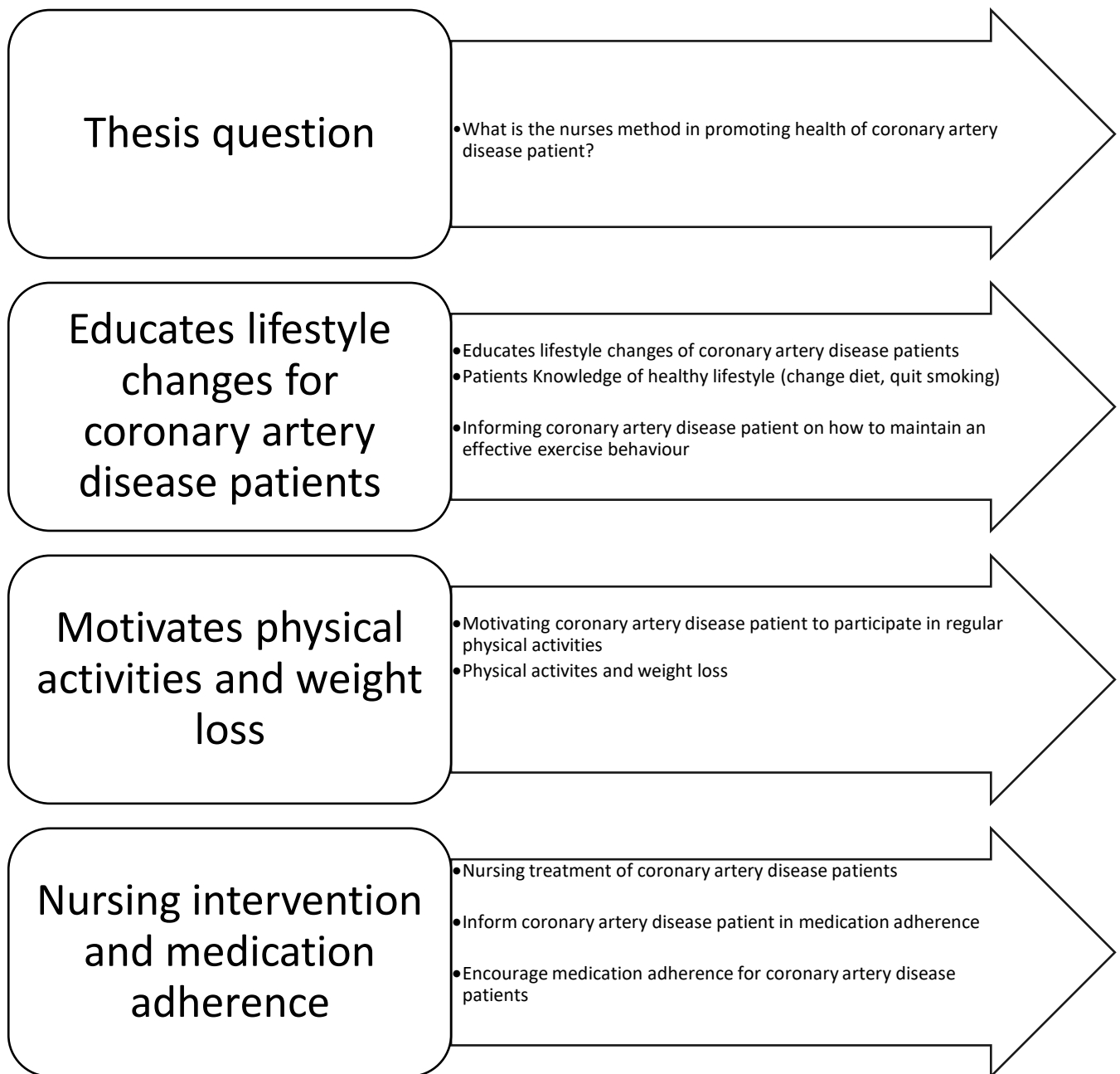


Figure 4 Three main categories and eight subcategories

5.1 Educates lifestyle changes for coronary artery disease patients

Nurses suggest healthy heart intervention program which consist of exercise, patient education and counselling, healthy diet, medication management, smoking cessation, stress management, physical activities, and a follow-up intervention. (Khatun et al. 2020).

Engaging in lifestyle changes creates an awareness of how to manage individual risk factors, the healthcare professionals require to be knowledgeable of coronary artery disease patients' perspective towards lifestyle change, because some patients have health system barrier that could affect their lifestyle changes. However, the patient-centred care given by nurses would help to increase the awareness of patient's health condition that could be a barrier for lifestyle changes. (Thronson et al. 2016, 25-32).

Additionally, nurses need to emphasise on the motivation of the patient to adopt a healthier lifestyle by a system of innovation, commitment to implement research result and progress towards supporting the patient long and short health information and their prevention needs. (Thronson et al. 2016, 25-32). However, nursing measure on coronary artery disease patients is to guide patient to use drug reasonable, to monitor the improvement of the patient condition and assist to improve healthy lifestyle (Zhou et al. 2021).

Diet is a major factor that reduces the risk of coronary artery disease, healthcare professionals encourage coronary artery disease patient to cultivate the habit of eating more vegetable, fruits, legumes, nuts, whole grain, and fish. However, saturated fats can be replaced with monosaturated and polysaturated fats which can help to decrease any form of cardiovascular diseases. (Regim & Siccardi, 2022).

People that use tobacco are at great risk for coronary artery disease. Nurses needs to counsel and motivate patients to find the most practical selfcare strategies to quit smoking and encourages them to use some pharmacologic intervention such as nicotine replacement which are available in patches, gums, lozenge, nasal spray, and oral inhaler. However, bupropion and varenicline are also used to help with smoking cessation. (Regim & Siccardi, 2022).

Healthcare professionals and nurses should plan an outpatient cardiac rehabilitation program and continual support to promote exercise behaviour for coronary artery disease patients. However, exercise is the main component of outpatient cardiac rehabilitation. The exercise training is walking on a treadmill, muscles strengthening and training to improve cardiopulmonary function and exercise tolerance. (Wong et al 2016).

Maintaining a good exercise behaviour will lead to a particular outcome and an evaluation of desirability. There are some certain factors that influence a good exercise habit such as peer support, dynamics, social support by partners, and the support from family, friends, and colleague. These factors are important to coronary artery disease patient in maintaining exercise habit positively. (Wong et al 2016).

5.2 Motivates physical activities and weight loss

Taking part in regular physical activities reduces cardiovascular risk and death, increases insulin sensitivity, lower blood pressure, reduce body weight, improve good cholesterol level. (Wong et al. 2020 pp 283-291). However, the eHealth educational support intervention has a big effect in promoting more exercise behaviour and increase the physical activities amount, the aim of this intervention is to teach and encourages coronary artery disease patient how to use the eHealth educational support website at home. (Wong et al. 2020 pp 283-291).

Finally, the use of technology played an important role in motivating coronary artery disease patients to increase their physical activities. The website enables patients to set a goal of exercising, self-monitoring the exercises done, health record and computerized generated feedback of exercise behaviour. (Wong et al. 2020 pp 283-291).

Physical activities are beneficial for coronary artery disease risk reduction. Nurse should advice patient to engaged in moderates' intensity activities for at least 150 minutes per week and some moderate activities which includes walking (2.2 to 4 mph), riding bike (4 to 9 mph), yoga activities and recreational swimming. (Regim & Siccardi, 2022).

Individual body mass index (BMI) between 25 to 29.8 kg/m are diagnose as overweight. However, nurse should recommend annual calculation of body mass index and lifestyle modification which includes calories restriction and weight loss based on the BMI value. Thus, weight loss has consistently improved the risk of cardiovascular disease. It is important for nurses to strongly motivates coronary artery disease patients to participates in physical activities, low calories diets and attend a weight loss maintain program. (Regim & Siccardi, 2022).

5.3 Nursing intervention and medication adherence for CAD patients

An evidence based scientific nursing intervention for patient with coronary artery disease were implemented through different nursing measures such as continuous assistant for patient to establish a healthy lifestyle, maintaining a long-term family treatment that reduces the incidence of angina pectoris and other complication and improve the quality of life of coronary artery disease patients. (Zhou et al. 2021).

The prescription of drug therapy by nurses together with high-intensity ways can decrease systolic blood pressure and LDL cholesterol. Thus, these secondary prevention by nurses has the effect on the quality of life of patients with coronary artery disease, also home-based exercise and stepping out program are encouraged by nurses in other to promote physical activities and improve active lifestyle. (Snarterse et al.2016 pp 50-56).

Additionally, the nurse coordinate care intervention is grouped into three categories which are, the risk factor management (lifestyle counselling, blood pressure and lipid control), multidisciplinary consultation (consultation and referral) and shared decision making (goal setting and family support). This nurse coordinate care intervention is beneficial for coronary artery disease patient to improve in their condition (Snarterse et al.2016 pp 50-56).

Medication adherence is usually defined by patient's intake of their medication prescribed. Drug combination reduces 80% of coronary artery disease death, However, the fear of medication side effect, lack of knowledge of medication benefit, poor patients' relationship are the main factors responsible for medication non-adherence. (Hussain et al. 2018, 552-557).

Post myocardial infarction medication helps to prevent future related coronary artery disease, and this has been proven in an evidence-based evaluation, implying class 1 recommendation for antiplatelets (aspirin, P2Y12 inhibitors), Beta blocker, ACE- inhibitors and Statin a lowering lipid agent. With the combination of all these medications, it reduces 80% of coronary artery disease mortality. (Hussain et al. 2018, 552-557).

Nurses should inform coronary artery disease patients about the benefit of taking medication and coronary artery disease patients living with their spouse are more adherent to their prescribed medication because of the support they get from them. It is important for nurses to encourage and motivates coronary artery disease patients and family members to help to participate in drug administration. (Hussain et al. 2018, 552-557).

6 Discussion

6.1 Discussion of the result

Previous scientific research perform on this subject has established the significant of health promotion and intervention for coronary artery disease patients and clarified different factors that affect coronary artery disease patients. The aim of this thesis is to gather existing evidence-based knowledge of factors affecting the health promotion of coronary artery disease patients and this information could be applicable in nursing practice.

The method in promoting health of coronary artery disease patients in this thesis is based on nursing perspective, patients' educational session that is effective in promoting more exercise behavior and improving the number of physical activities reduces the risk of coronary artery disease. (Wong et al. 2020). In another study, it shows that for patient with coronary artery disease to have a healthy heart, it important for them to participate in some program that has been introduced, such as exercise educational demonstration counselling, a booklet guide, and a follow-up intervention. (Khatun et al. 2021, 7-22).

By implying medication adherence to patients with coronary artery disease it reduces 80% of coronary artery disease mortality and patients with coronary artery disease living with their spouse are more adherent to their prescribed medication because of the support they get from them. (Hussain et al. 2018, 552-557). It is important for nurses to encourage and motivates CAD patients and family members to help to participate in coronary artery disease drug administration.

More so, another research shows that financial hardship, lack of knowledge about the purpose of the medication can affect non-persistence of medication for patient with chronic disease such as coronary artery disease, the research study also emphasizes on the importance to introduce behavioral intervention such as pill box, in-office patients counselling, and a follow-up call by care provider which gave positive effect on the medication adherence to patients. (Grandapuri et al. 2016, 237-244).

The findings highlighted the importance of individual participation in care together with the nurses. The article was consistence on a complexity of the study.

6.2 Implications on nursing practice

All the articles on this thesis emphasis on exercise, physical activities, eating habits, family support and medication adherent as a factor to reduce the risk of coronary artery disease and even death. The awareness and understanding of the outcomes of healthy heart program among nurse could improve patient's lifestyle in other to prevent coronary artery disease. (Khatun et al. 2021, 7-22).

Some patients have health system barrier that affect their lifestyle, the patient-centred care given by nurses would help to increase the awareness of patient knowledge, needs and resources.

Nurses need to emphasise on the motivation of the patient to adopt a healthier lifestyle by a system of innovation, commitment to implement research result and progress towards supporting the patient long and short health information and prevention needs. (Thronson et al. 2016, 25-32).

In this research, the nurse coordinated care has the capacity to improve patients' agreement and the risk factor to control the coronary artery disease, the drug therapy by nurses is on a high intensity method which reduces SBP and LDL cholesterol effectively. (Zhou et al.2021). Nurses have a major role in strengthening and motivating patients to make changes and to adopt a healthy lifestyle. (Micháلكová et al. 2016,135-140).

6.3 Critical appraisal, Ethical Considerations, Validity and Reliability, Limitations

The Hawker et al. (2002) appraisal tools was used to assess the reliability and quality of the articles included in the literature review (Appendix 1). The tool evaluates the following aspect of the articles such as abstract/title, introduction and aim, method and data, sampling, data analysis, ethics and bias, result, transferability or generalizability and implication and usefulness on a scale of 1-4 (1 being the lowest and 4 being the highest) for the total score of 36, the minimum requirement for an article to be concluded in this review was 31 due to selection rule the number of article included was limited to seven articles.

This thesis was conducted regarding the ethical principle of scientific research and other researchers' accomplishment among scientific research, and evidence-based approach and it was executed by the stages of conducting a literature review in accordance with Smith and Noble 2016. 2-3.

This research has no previous experience of conducting a literature review, one important ethical guideline of the article used in this study was accuracy and that is informed consent was obtained from all participants during the research. By following the guidelines instructions accuracy occurred and remained throughout the thesis process which gives a valid outcomes and accurate result. Finally, honesty and integrity with this study was supported by accuracy to ensured that the articles used in this thesis followed the ethical guidelines.

Furthermore, the articles selected for this thesis were evidence-based, and was carefully collected, read, analyzed critically to ensure that the results of the findings answer the research question and the purpose of this thesis. This thesis is a part of scientific research that is carried out in the field of nursing science, the main goal is to create an awareness of the method in promoting the health of coronary artery disease patients and it is a valid study subject that is shown in this study as a key concept within nursing.

The research article selected for this thesis were acquired from three database CINALH (ESCOB), PubMed and Medline, these are available to all student at JAMK university of applied sciences, and the information provided in this database was reliable, scientific and peer reviewed. These three databased were chosen due to their reliability and accessibility, and the three databases offered an important result that were relevant to the study and offered answer to the research question.

According to the articles used in this research all participants were between the age of 18- 70 years old and informed consent and agreement were collected from all participants. To ensure further validity and reliability of the information used in this thesis, the search was executed by focusing only on recent article that were published between 2016-2022. Strict inclusion criteria were followed in the selection process. In this context, the criteria support the reliability and validity of this thesis to ensured that the articles used in this research study followed the ethical guidelines.

This article was obtained from three different databases which limits the material available for this thesis. Another limitation was that some exclusion articles that were chargeable as this study did not receive any fund and was conducted by one student as bachelor thesis. Thus, many promising research article were excluded from the final set of articles and an inexperience of the researcher of this study could be interpreted as a limitation as well.

The findings of this study were obtained from different countries and culture. Although, the findings are not limited to a certain geographical group, however, the articles were written in English and were searched during the article search process.

This study was conducted to create awareness for nurses and patients on method in promoting health of coronary artery disease patients. The findings of this study can be perceived as beneficial for any health care professionals tending to promote the health of a coronary artery disease patients.

7 Conclusion

In conclusion, the health promoting intervention for patients with coronary artery disease are patient education, counseling, lifestyle changes and educating patients on how to manage the risk factors. Coronary artery disease patients should engage themselves in an intervention program where they can receive encouragement on healthy diet, medication management, smoking cessation, stress management and physical activities.

Additionally, coronary artery disease patients should regularly participate in physical activities which can reduce the disease risk and death, and the nurse coordinated care has the capacity to improve patients' agreement and the risk factor to control the coronary artery disease also prescription of drug therapy by nurses together with high intensity way can decrease the systolic blood pressure and LDL cholesterol and improve the quality of life of the patient suffering from coronary artery disease.

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Appendices

Appendix 1. Critical Appraisal of the articles Hawker et al. 2002

Author	Abstra/ title	2 Introduction and aims	3 Methods and data	4 Samp- ling	5 Data analysis	6 Ethics and bias	7 Results	8 Transferability/ge- neralizability	9 Implications and usefulness	Total
Khatun et al. 2021	4	4	4	4	4	4	4	4	4	36
Wong et al 2016	4	4	4	1	4	4	4	3	3	31
Wong et al. 2020	4	4	4	4	4	4	4	4	3	35
Zhou et al 2021	4	4	3	3	4	3	3	2	4	30
Snarterse et al. 2021	3	4	3	3	4	4	3	3	4	31
Hussain et al.2018	4	4	3	3	4	3	4	3	3	35
Thronson et al. 2016	4	4	4	4	4	4	2	4	4	34

Appendix 2. Summary of Review Articles

Author	Publish year and country	Title	Research Method	Main result	Critical Appraisal Score
Khatun, Asdornwised, Thos- inga, Chansatitporn, Tanti- wongkosri	2021 Thailand	Effectiveness of Healthy Heart Intervention among Bangladeshi with Coronary Artery Bypass Graft: A Ran- domized Controlled Trial	Randomized controlled trials	Healthy heart interven- tion (Behavioural changes, nutrition edu- cation and physical ex- ercise	36
Wong, Zhong, Sit, Chair, Leung, Leung, Leung	2016 Hong Kong	Attitude toward the out-pa- tient cardiac rehabilitation program and facilitators for maintenance of exercise be- haviour	Qualitative description study. Indebt interview	factors affecting the in- tention and mainte- nance of exercise be- haviour.	31
Wong, Leung, Chair, Sit.	2020 China	Effects of a Web-Based Edu- cational Support Intervention on Total Exercise and Cardio- vascular Risk Markers in Adults with Coronary Heart Disease	A prospective randomized controlled trial	The main result shows that higher amount of physical exercise and higher HDL-c between 3 to 6 months respec- tively	35

Thronson, Sawatzky, Schultz	2016 Canada	Exploring the Perceptions and Health Behaviours of Patients Following an Elective Ad-hoc Percutaneous Coronary Intervention: A Qualitative Study	Quantitative study using participant aged 44 to 56 years old	Motivation for adopting a healthier lifestyle, lifestyle changes	3
Zhou, Yuan, Wang, Zhang, Fan, Zhang, Ma	2021 United States of America	Effect of continuous nursing on angina attack and quality of life in patient with coronary artery disease	Randomized controlled trials	continuous nursing intervention on coronary artery disease	30
Snarterse, Dobber, Jepma, Peter, Riet, Boekholdt, Buurman, Reimer	2016 Netherlands	Effective components of nurse-coordinated care to prevent recurrent coronary events: a systematic review and meta-analysis	Randomized controlled trials	drug therapy by nurses and a high-intensity strategy appeared to be effective in reducing SBP and LDL cholesterol	31

Hussain, Jamal, Qadir	2018 Pakistan	Medication adherence in post myocardial infarction patients	Quantitative study A survey	Partners help and support with CAD patient	34
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