



# **NURSES' SUPPORT FOR HEART DISEASE PATIENTS SUFFERING FROM INSOMNIA**

## **A Literature Review**

Hasina Akter

Sofia Thomson

Bachelor's thesis  
November 2021  
Degree Programme in Nursing

## **ABSTRACT**

Tampereen ammattikorkeakoulu  
Tampere University of Applied Sciences  
Degree Programme in Nursing

AKTER, HASINA & THOMSON, SOFIA:  
Nurses' Support for Heart Disease Patients Suffering from Insomnia  
A Literature Review

Bachelor's thesis 39 pages, appendices 4 pages  
September 2021

---

Several studies establish the bidirectional connection between a heart disease and insomnia. However, there is little known about the role of nurses in helping a heart disease patient with insomnia. The aim of the bachelor's thesis was to provide useful information about the nurses' role in helping heart disease patients to overcome sleeping problems. The goal was to provide evidence-based and current information for both nurses and heart disease patients about how to minimize the effect on insomnia.

The method used in this bachelor's thesis was a literature review that was conducted by using descriptive methods. The literature was collected through a search engine Recognized by TAMK, using keywords of the thesis. Sixteen articles were selected for literature review to find out the answers to the three main study questions. The articles used in this bachelor's thesis were peer-reviewed and published in EU, UK, USA, and Australia.

The findings of the study were presented under different subtitles. The findings manifest that both medical and nonmedical interventions are important for promoting the sleep quality of patients with heart disease, and nurses can play a crucial role in the intervention process. The study findings can be further elaborated by future research in specific nursing fields.

---

Keywords: insomnia, heart disease, cardiovascular disease, self-care management strategies, promoting sleep quality, sleep hygiene, pharmacological and non-pharmacological management

---

## CONTENTS

1	INTRODUCTION .....	4
2	THEORETICAL STARTING POINTS .....	6
2.1	Nurses' support .....	6
2.2	Heart disease.....	6
2.3	Insomnia .....	7
2.4	Bidirectional relationship between heart disease and insomnia .....	7
2.5	Nurses' knowledge & Evidence-Based Practice (EBP).....	7
2.6	Patients' education .....	8
2.7	Selfcare management .....	8
2.8	Sleep hygiene & Sleep-rhythm.....	8
2.9	Pharmacological management.....	9
2.10	Non-pharmacological management .....	9
3	PURPOSE AND OBJECTIVES.....	10
4	METHODOLOGY .....	11
4.1	Selection criteria .....	11
4.2	Data collection .....	12
4.3	Critical appraisal .....	13
4.4	Data analysis .....	14
5	FINDINGS.....	15
5.1	Nurses' knowledge .....	16
5.2	Patients' education .....	20
5.3	Selfcare management .....	21
6	DISCUSSION ON FINDINGS .....	25
7	ETHICAL CONSIDERATIONS AND LIMITATIONS OF THE STUDY	27
8	CONCLUSIONS .....	28
8.1	Implications and suggestions.....	29
	REFERENCES .....	30
	APPENDICES.....	36

## 1 INTRODUCTION

Insomnia has multifarious effects on overall physical and mental health (Fernandez-Mendoza & Vgontzas 2013.) Insomnia one of risk factor for patients with cardiovascular disease (CVD) (Siebmanns, Johansson, Sandberg, Johansson & Broström 2020, 364). Different researchers use different modifiers to define insomnia. One of such commonly used modifiers is sleep duration (Javaheri & Redline 2017, 436.) The literature deals with the high incidence of insomnia among patients with a variety of CVDs and heart failure (HF) (Javari & Redline 2017, 442).

Though several studies have been done on associations between insomnia and CVDs, still, there is a lack of effective sleep-based intervention strategies (Siebmanns, et al. 2020, 364). To develop such intervention strategies nurses can play a crucial role with other medical professionals as well as heart disease patients who suffer from insomnia. However, there is little known about how nurses can help heart disease patients with insomnia. Nurses meet patients more frequently than doctors and often patients have longer appointments with nurses. Hence, nurses have an opportunity to understand heart disease patients' experiences about insomnia and the factors that trigger insomnia. Eventually, this understanding and knowledge help them to form the basis for nurse-led insomnia and CVD disease interventions. (Siebmanns, et al. 2020, 368-369.) In such a situation nurses can play an important role in both medicinal and non-medicinal treatment procedures. Nurses can help to develop non-pharmacological interventions strategies and they can disseminate such strategies to the patient's community. Nurses play a vital role also on the pharmacological intervention process.

This thesis aims to fill such a gap, by reviewing medical journals, articles, and other relevant literature. The thesis will sum up medical and non-medical methods and techniques that nurses can use to promote the well-being of heart disease patients who are suffering from insomnia. Relevant literature is searched by using a search engine recognized by TAMK. The irrelevant literature is excluded

through exclusion criteria, while the most relevant literature is selected for analysis. The thesis has been divided into eight chapters. The introductory chapter briefly introduces the research topic and justifies why such research should be done. Along with the other key concepts the second chapter briefly introduces the three key concepts that hover around the thesis topic—nurses' role, heart disease and insomnia, while research purpose and objectives are introduced in the chapter three. The methodological procedure of the thesis is described in chapter four. Three main research questions are elaborated in chapter five based on the findings from studied literature. Discussion on findings and ethical considerations are presented in chapters six and seven. In the final chapter, some research implications and suggestions are presented.

## **2 THEORETICAL STARTING POINTS**

In this section the key concepts are elaborated based on the recent medical journals and other sources.

### **2.1 Nurses' support**

Supporting patients is one of the most important parts of nursing. Nurses' knowledge on how to promote positive health outcomes is crucial. Nurses need to understand patients' situations comprehensively. Nurses need to integrate patients experience and coping strategies with their evidence-based knowledge. This starting point creates a platform for the implementation of non-pharmacological treatments that is thoroughly explained by answering the objective and purpose of the thesis. The study focuses on how nurses play an essential role in such selfcare management strategies. (Johansson, Karlsson, Brödje & Edell-Gustafsson 2012, 44-51.)

### **2.2 Heart disease**

Heart disease is form of cardiovascular diseases. Heart disease refers to a variety of conditions that affect the heart's structure and function (Heart Disease and Stroke Statistics—2020). In this thesis, sometimes the terms heart disease and other forms of coronary diseases are used interchangeably. The needs, symptoms, and selfcare management strategies of coronary artery disease (CAD) patients with sleep disorder have rarely been studied (Johansson et al. 2012, 44). In their studies, Johansson et al. (2012) have investigated and described the selfcare management strategies that were used by patients with coronary artery disease to facilitate sleep.

### **2.3 Insomnia**

Insomnia is one of the forms of sleep disturbances. Insomnia is defined as difficulty initiating sleep and maintaining sleep, or too early waking up in the morning and not able to restore sleep (Johansson, Windahl, Svanborg, Fredrichsen, Uhlin & Edell-Gustafsson 2007). However, there is no unanimous definition of insomnia. Different researchers have defined and measured insomnia, using wide variety of parameters. There are some conflicts in data information, that is why caution must be taken into consideration when comparing studies and interpreting outcomes. (Javaheri & Redline 2017, 435.)

### **2.4 Bidirectional relationship between heart disease and insomnia**

Most of the research findings have found an association between heart disease and insomnia symptoms. Some researchers have not found a direct connection between the two. However, the researchers have not proven the disassociation between heart disease and insomnia symptoms. Codie R. Rouleau and her colleagues (2017) have carried out research on the relationship between insomnia and cardiovascular risk factors. The study has evaluated the impacts of cardiac rehabilitation exercise program among patients with both cardiovascular and insomnia symptoms. The study findings demonstrate that there is a bidirectional connection between cardiovascular and insomnia symptoms. (Rouleau, Toivonen, Aggarwal & Arena 2017, 201–207.)

### **2.5 Nurses' knowledge & Evidence-Based Practice (EBP)**

Nursing knowledge is derived from and based on evidence-based knowledge and its practices. The British epidemiologist Archie Cochrane has contributed to the development of Evidence-Based Practice (EBP) (Godshall 2015, 2). This was a big paradigm shift which has been later incorporated into the nursing practices as well. As a consequence, clinical actions and practices have been started changing (Godshall 2015, 4). There is on unified definition for EBP. It refers to processes through which the best evidence-based answers are sought to. (Polit

& Beck 2011.) Nursing knowledge is also enriched by the experiences which are derived from patients' situation, own experiences and care procedures. The interaction between nurses' evidence-based knowledge and patients' experience and perception of sleep is very important to make an effective patient-specific care plan.

## **2.6 Patients' education**

Patients' education is patients' knowledge about their own situations, diseases and their management. Patients' education also includes how they are informed by medical professionals. Patients' education can be used as an effective tool for promoting patients' own health and wellbeing. Nurses can also play an important role in patients' education, making a good balance between own evidence-based knowledge and patients' own experience and perception about insomnia and heart disease. (Siebmanns, Johansson, Sandberg, Johansson & Broström 2020, 364-374.)

## **2.7 Selfcare management**

Selfcare management refers to how patients themselves manage diseases with the guidance of medical professionals. The more patients are educated and informed about diseases and their situations, the more they become able to manage their situations.

## **2.8 Sleep hygiene & Sleep-rhythm**

Sleep-hygiene is considered as a lifestyle factor that may adjust patients sleeping conditions. To be able to adjust to a healthy sleep pattern, patients must change their lifestyles by applying activities such as, healthy non-pharmaceutical routine before bedtime. (Johansson, Karlsson, Brödje & Edell-Gustafsson 2012, 47-49.) Sleep-rhythm has been described as selfcare behaviour to maintain balance between activity, rest, and sleep. Recommended strategies such as relaxation and



alleviating of physical symptoms before bedtime is very crucial for a better sleep. (Johansson et al. 2020, 48.)

## **2.9 Pharmacological management**

Pharmacological management refers to medicinal approach to prevent or minimize symptoms of heart disease and insomnia. Pharmacological management is predominantly administered by doctors. Nurses' role in this approach is mostly restricted to distribution of drug to patients and tell them how medicines to be used.

## **2.10 Non-pharmacological management**

Non-pharmacological management refers to a set of management strategies to prevent or minimize symptoms of heart disease and insomnia, which are not based on pharmacological treatment. Among other things, such non-pharmacological management strategies include maintaining patients' sleep rhythm, sleep hygiene, relaxation training, lifestyle changes. Cognitive behavioural therapies can help patients to implement non-pharmacological management strategies.

### **3 PURPOSE AND OBJECTIVES**

The purpose of this bachelor's thesis is to find out how nurses can support heart disease patients who are suffering from insomnia. There is little known about the nurses' role in promoting sleep quality in patients with heart disease. The objective of the thesis is to increase understanding about nurses' role in promoting sleep quality of patients with heart disease.

The thesis will find out answers to the following study questions:

1. Why nurses' knowledge is important in promoting sleeping quality of heart disease patients?
2. Why patients' education is important in selfcare management strategies for promoting sleep quality of heart disease patients?
3. How can insomnia be prevented to reduce worsening of heart disease?

## **4 METHODOLOGY**

Written documents and records are useful sources of data (Holloway & Galvin 2017, 118). A literature review method used in the implementation of this bachelor's thesis. As indicated by Polit & Beck (2012,120-121) literature review is a product that is created by collecting useful information from e evidence-based study. The findings were critically analysed, synthesized, and evaluated that helping the writers concentrate on the related area of the topic (Efron & Ravid 2019). For the accuracy and safety of the information, the descriptive literature review process is used to provide meaningful and thoroughly reviewed evidence-based information for the patients. (Kitsiou, Mirou, Pare & Trudel 2015,186).

### **4.1 Selection criteria**

The authors have started selecting the data in the light of the three key concepts described in the theoretical starting points. The key concepts were "nurses' support", "heart disease" and "insomnia". The word pair "cardiovascular disease" also used to find relevant and recent articles. The search words were used in different combinations. Explicit references used in this bachelor's thesis, are the most related to the topic and the focus literature review to avoid inappropriate studies. (Galvan & Galvan 2017, 61-52.)

The process of the bachelor's thesis is based on the aim of the topic chosen. As indicated on the purpose of the thesis, the aim is to investigate how nurses can support heart disease patients who are suffering from insomnia. To create new and useful information for the patients, the study questions were answered based on the existing evidence-based knowledge. The literature search was done according to the theoretical starting point where all the questioned were answered with the intention to fulfil the thesis purpose (Polit & Beck 2011). To ensure the quality of the articles used, writers were critical in selecting and identifying and citing sources. The writers decided to limit on the most important information and most relevant to the bachelor's thesis topic. The analysis of all the articles were

done by making notes on the definitions of the terms used in different articles to find the relations to the studies explanations. (Galvan & Galvan 2017, 10-11.)

Table 1. Acceptance & Omission criteria

<b>Criteria</b>	<b>Acceptance</b>	<b>Omission</b>
Language	English	Non-English
Articles type	Peer-reviewed articles published in academic journals, Full text	News journals, Wikipedia, blogs, media pictures
Sources type	Mainly primary sources and relevant to health care practice	Sources that are not related to our research topic
Time period	January 2005 to July 2021	Any articles outside of these time period

## 4.2 Data collection

The literature was collected through a search engine recognized by TAMK, using keywords of the thesis. Sixteen articles were selected to find out the answers to find out the answers to the three main study questions. The articles used in this bachelor's thesis were peer-reviewed and published in EU, UK, USA, Australia, and Sweden. Each article found has been thoroughly looked at. Important information that are relevant to the thesis were collected and used for implementing this bachelor's thesis (Galvan & Galvan 2017).

The databases that are used for the implementation of the Bachelor's thesis was CINAHL, PubMed, ProQuest, EBSCOhost, and relevant academic articles from the most reliable sources such as science direct and approved by Tampere University of applied sciences.

Table 2. Data Searches

Database	Search phrase	Results
CINAHL	(Insomnia or sleep disorders or sleep disturbance or sleeplessness) AND (heart diseases or heart problems or cardiovascular diseases) AND (nursing interventions or nursing care or nursing support)	144
PUBMED	(Insomnia or sleep deprivation) AND (heart disease of cardiovascular diseases) And (nursing intervention)	371
EBSCOhost	Insomnia or sleep disorders or sleep disturbance AND heart disease or cardiovascular disease AND nursing interventions or nursing care	7
PROQUEST (Nursing and allied health database)	(Insomnia AND sleep deprivation) AND (heart disease AND cardiovascular disease) AND (evidenced based nursing care AND interventions)	50

### 4.3 Critical appraisal

Critical appraisal was done by critically analysing the literature on the topic to achieve the quality of the product. As mentioned by Kitsiou et al. (2019, 189) the strength of the critical review depends on its ability to point out unwanted issues, compatibility, and the areas where the unworthy knowledge exists. The critical appraisal was applied carefully in the search and selection of the studied literature (appendix 1). In such critical appraisal, the authors have used the Polit and Beck's Guide (2012, 115-117). Moreover, the critical appraisal was applied deliberately

throughout the whole thesis writing process to judge its validity. After identifying the research questions, the authors have reviewed the important literature consisting of the information published and closely related to the research questions (Holloway & Galvin 2017, 36). The authors of this thesis knew all research is rightly open to scrutiny from its readers and hence must demonstrate that it is credible and valid. (Holloway & Galvin 2017, 303.)

#### **4.4 Data analysis**

To evaluate the accuracy of the study, a qualitative systemic review was used. The findings were identified, selected, appraised and the existing data from quantitative experiential studies to answer the main important questions such as effect, strength, direct and correlation between heart disease and insomnia (Kitsiou et al. 2015, 188). The analysis was mainly done by reviewing which articles are more relevant to the bachelor's thesis. The selected articles were carefully read multiple times. While reviewing the selected literature, the authors identified important themes (Polit & Beck 2011, 119). The findings from data analysis were presented under the three main research questions.

## 5 FINDINGS

In the findings, all the agreement and disagreement found has been clarified according to the study questions. To answer the questions, the writers started by finding the connection between insomnia and heart disease. Some findings indicated that there is connection while others do not find any direct correlation between the two conditions. None of the studies have proven any disagreement. Most of the research articles found, indicated that patients with cardiovascular disease have shown some severe sleeping problems. The links between insomnia and heart disease is not unidirectional, rather bidirectional (Canivet, Nilsson, Peter, Lindeberg, Karasek & Östergren 2014). Javaheri & Redline (2017) has also reconfirmed this bidirectional fact. Their findings demonstrate that there is a high chance of insomniac disorders among patients with heart failure (HF). Heart disease-related worries, depression and medication contribute to insomnia. (Javaheri & Redline 2017, 439.)

Decade ago, several observational studies have demonstrated an association between insomnia and incident cardiovascular disease (CVD) morbidity and mortality, including hypertension (HTN), coronary heart disease (CHD), and heart failure (HF) (Javaheri & Redline 2017, 435). Another study by Canivet et al. (2014) attempted to investigate the correlation between insomnia and cardiovascular events, taking the patient's socioeconomic, age and gender variables into account. This longitudinal, register-based research has studied the data of Swedish city of Malmö of 5875 men and 7742 women ages 45 to 64. The research findings suggested that it is worthwhile to consider not only gender but also socioeconomic status when discussing the impact of poor sleep on cardiovascular disease (CVD) risk. The research has found a strong association between insomnia and cardiovascular (CV) outcomes. (Canivet et al. 2014, 292-299.)

Different researchers use different parameters. One of the most used techniques for assessing insomnia symptoms was a questionnaire. In those questionnaires common modifiers are sleep duration, sleep quality and patient's self-reporting prior diagnosis. (Javaheri & Redline 2017, 436.) Hence the results of different

research about sleep disturbance and its impact differ significantly. In this thesis, sometimes the terms insomnia and sleep disturbance are used interchangeably. As mentioned earlier that there are no such articles found, which has investigated elaborately the role of nurses in helping heart disease patients with insomnia. Majority of articles and books searched for and selected for analysis dealt with the role of medical professionals in helping patients in such cases. In this thesis the study findings are gathered and analysed for depicting the role of nurses, addressing three main research questions. Hence, study findings are presented in three sub-sections below. In each sub-section, the study findings are presented under the rubric of representative subtitles.

### **5.1 Nurses' knowledge**

The first research question was "why nurses' knowledge is important in promoting the sleeping quality of heart disease patients?" Seven most relevant articles with this question number one were scrutinized and findings are summarized under several of themes: nurses' knowledge about the factors affecting sleep, nurses' knowledge about cardiovascular disease, nurses' knowledge about the bidirectional relationships between insomnia and heart disease, the importance of nurses' knowledge about patients' own perception of insomnia and heart disease and importance of nurses' knowledge in patient-specific care plan and implementation.

Sleep is a basic human need. Human being needs sleep to help their body recover from the daily activities to be able to function again in a healthy way. According to Carskadon & Dement (2011) & Gellerstedt, Medin, Kumlin & Karlsson (2015, 3665), sleep is a basic human need and can be defined as "a reversible state of behaviour in which perception is detached from the environment and unresponsiveness to it.

Nurses' evidence-based knowledge about sleep helps them to understand the impacts of sleep on patient's health. The nature of nurses' work creates a platform where closeness to the patients is formed. This relation can be used to promote patients' health and wellbeing through improving patients' sleep hygiene.



(Radtke, Obermann & Teymer 2014.) Radtke et al. (2014) have investigated the nursing knowledge about physiological and psychological consequences of patient sleep deprivation. Though their research focused on acute care settings, the crucial role of nursing knowledge about sleep deprivation and its outcomes can be applied to other fields as well. Findings of their research show that nurses were aware of the importance of sleep and the effect of insomnia on patients' ability to recover, as well as strategies to prevent insomnia in the acute care setting. (Radtke et al. 2014, 178-184.)

Patients' sleep quality is deeply associated with their health conditions and living environment, whether patients are at hospital or home. For an effective intervention to patients' conditions, nurses should have knowledge about the patients' overall living conditions and the factors that affect patients' wellbeing. Sufficient knowledge of nurses helps them to recognize insomniac symptoms. If they do not have the necessary knowledge, they will be unable to intervene the right way. (Alkadhi, Zagaa, Alhaider, Salim & Aleisa 2013; Nesbitt & Goode 2014; Pilkington 2013; Radtke et al. 2014.) Factors that affect sleep quality may be countless. The common factors can be categorized as medicinal side effects, symptoms of other physical and psychological diseases, lifestyle, living and working environment.

To be able to start sleep-promotion intervention, nurses should have sufficient knowledge about sleep physiology (Nesbitt & Goode 2014; Radtke et al. 2014). Nurses' evidence-based knowledge about cardiovascular diseases and the risk factors is an integral part of their professionalism. This creates a platform to understand patients' conditions, life situation and patients' own coping strategies. Over the past decades/years, several observational studies have shown an association between insomnia and cardiovascular disease morbidity and mortality, including hypertension, coronary heart disease and heart failure. (Javaheri & Redline 2017, 435).

Insomnia is significantly a public health problem and there has been a connection between insomnia and cardiovascular disease (Canivet et al. 2014, 292). Insom-

nia has been proved as one of the important risk factors of cardiovascular diseases. Some research has established the fact that the patients have poor sleep because of their anxiety derived from heart related disease. The links between insomnia and heart disease is not unidirectional, rather bidirectional (Canivet et al. 2014). Javaheri and Redline's research (2017) have also reconfirmed this bidirectional fact. They have found high correlation between insomniac symptoms and heart disease. (Javaheri & Redline 2017, 439.)

The bidirectional relationships between symptoms of insomnia and the risk factors of cardiovascular disease and how these two are simultaneously influenced by cardiac rehabilitation (CR) programs have been investigated by Codie R. Rouleau and her research team in 2017. The team analysed data of 80 patients with cardiovascular and insomnia disease. The team analysed the data of 80 participants with cardiovascular disease and insomnia in a 12-week outpatient CR program. In the study, the severity of insomnia symptoms, blood pressure, body mass index, mental anxiety, and lipid profile were measured at baseline and at the end of the program. Their study findings demonstrate that cardiovascular risk factor and symptoms of insomnia were minimized in the patients who have completed a three-month exercise-based CR. (Rouleau et al. 2017, 201-202.)

Integration of a patients' experience and perception of their own sleep affecting factors is an important component of care plans for patients with heart disease. Taking patients' perception of sleep affecting factors into account, Anna Johansson and her colleagues have made such an important attempt to make a framework for nursing management (Johansson, Windahl, Svanborg, Fredrichsen, Swahn et al. 2007, 471). The study has revealed new information about coronary artery disease patients' knowledge about sleep, patients' attitude and behaviour as well as the positive or negative impact in outpatient care. (Johansson et al 2007, 471.)

The interaction between nurses' evidence-based knowledge and patients' experience and perception of sleep is very important to make an effective patient-specific care plan. Nurses also should have an understanding about how patients'

socioeconomic status, gender, age and occupation affect sleep quality and eventually establish a strong connection with cardiovascular diseases. One such attempt to investigate the correlation between insomnia and cardiovascular events was made by Catarina Canivet and her research team in 2014, taking the patients' socioeconomic, age and gender variables into account. This longitudinal, register-based research has studied the data of Swedish city of Malmö of 5875 men and 7742 women ages 45 to 64. Research suggests that in addition to gender, socioeconomic status should be considered when discussing the impact of poor sleep on cardiovascular risk. The research has found a strong link between insomnia and cardiovascular disease (CV) outcomes. (Canivet, Nilsson, Lindeberg, Karaset & Östergren 2014, 292-299.)

In 2015, Linda Gellerstedt and her colleagues have carried out research to find out nurses' experiences of patients' sleep in the hospital and their perceptions of sleep-promoting measures (Gellerstedt et al 2015, 3664-3673). According to their research findings, working nurses do not have sufficient access to information on sleep and sleep-promoting strategies. However, the importance of nurses' knowledge has been reiterated throughout their research. They recommended that to be able to provide high-quality and evidence-based sleep-promotion strategies, nurses should be trained well enough. In similar type of research carried out by Radtke et al. (2014) assessing whether the nurses have a better understanding of sleep quality outcomes in acutely ill patients. They have also investigated whether nurses' knowledge about the effect of sleep quality have any impact on patients. These research findings ended up in different results, i.e., the research found the nurses are knowledgeable in recognizing negative effects of insomnia. (Radtke et al. 2014, 178-184.) Irrespective of varied results about the sufficiency of nurses' knowledge, the inevitability of nurses' knowledge about sleep deprivation, its possible negative impacts and coping strategies was recognized in both studies.

According to Johansson et al. (2012, 44), the needs, symptoms, and selfcare management strategies of coronary artery disease (CAD) patients with sleep disorder have rarely been studied. In their studies, they have explored and described

self-care management strategies used by coronary heart disease patients to facilitate sleep.). The research conducted by Johansson et al. (2012, 44) also focuses on how nurses play an essential role in such selfcare management strategies.

A successful interaction between nurse's evidence-based knowledge and patient's experience and perception of sleep can help to avoid quicker pharmacological solution. For non-pharmacological sleep and lifestyle change plans, it is important to identify intentional and unintentional treatment strategies for patients. (Johansson et al. 2007, 471). To promote positive health outcomes, nurses need to understand patients' situations comprehensively. Nurses need to integrate patients' experience about sleep deprivation and coping strategies with their evidence-based knowledge. This starting point creates a platform for the implementation of non-pharmacological treatment.

## **5.2 Patients' education**

The second research question was "why patients' education is important in selfcare management strategies for promoting sleep quality of heart disease patients?" It is evident from the studied literature that the patients' education in selfcare management is very crucial. The effectiveness of selfcare management strategies largely depends on how patients were informed about their conditions and remedies by caregivers. A successful patients' education helps to reduce patients' re-admissions to the hospital. (Strömberg 2005; Blue, Clark, Dahlström, Dickstein, Ekman, Lairseck & Jaarsma 2014.)

Educating patients about their conditions and how to manage them, helps caregivers to be able to provide patients with the right selfcare management according to patients' individual needs, values, and preferences (Aboulhosn et al. 2018). The effectiveness of pharmacological and nonpharmacological interventions prerequisite patients' education. Hence, on the one hand patients' involvement in care plan is very crucial. On the other hand, the nurses should listen and value

patients' own experiences and perceptions about insomnia and heart disease. Nurses need to comprehend patients' overall life situation and own coping strategies. Patients' needs should be assessed, and symptoms should be identified. (Johansson et al. 2007.) The more nurses understand patients and their situations, the more they become able to educate and help their patients. A successful patients' education helps patients to implement selfcare management strategies successfully. Based on the bachelor's thesis findings, the patients' selfcare management and its strategies are elaborated in the next section.

### **5.3 Selfcare management**

The third research question was "how can insomnia be prevented to reduce worsening of heart disease?" The findings of the studied literature suggest that patients' selfcare management is very important for sleep hygiene of heart disease patients. The findings are elaborated below. The selfcare management is a very important working tool, which helps to reduce the risk of the heart disease (Blue et al. 2014). To accomplish a better and effective outcome of selfcare management protocol, both patients and caregivers must have a good understanding of proper selfcare management strategies (Aboulhosn, Bozkurt, Broberg, Colman et al. 2019). According to Kumah 2017, the selfcare measures taken by the individuals towards their own health and wellbeing is very important. It helps with improvement of care intervention and healthcare quality, outcome of selfcare management, patients' monitoring and the provision of treatments by the healthcare providers.

The research conducted by Johansson et al. (2012, 46-49) proposed self-care strategies to facilitate sleep in patients with heart disease. Another study by Wetter, Crönlein & Klösch (2015, 83) Indicated that appropriate insomnia prevention measures such as behaviour-related and relation-oriented as well as Cognitive behavioural therapy for insomnia (CBTi), are believed to have a significant improvement in sleep disturbance. The aim of behaviour-oriented is to provide education about sleep and management strategies to help the patients to be able

to change their behaviour and enable them to adjust their sleeping habit and obtain better sleep. The aim of relation-related therapy is to educate patients on how to reduce the risk factors of insomnia at the structural level such as health promotion programs for better sleep and recommendations for prevention measures. (Wetter et al. 2015, 83.)

A study conducted by Bathgate & Fernandez-Mendoza (2018), indicated that cognitive behavioural therapy helps both the patients and the caregivers to find a way to help the patients manage their condition. The strategy is used by identifying the problem, finding the relationship between insomnia and correlation to heart disease, discussing problems affecting sleeping, the benefits of good sleeping as well as the harms of insomnia (Qaseem et al 2016, 125-131). Siebmanns et al. (2020, 370) pointed out that the goal of cognitive behavioural therapy is to help the patient change their way of thinking and behaving. towards their health responsibly. This qualitative descriptive study has explained how nonpharmacological actions had help some patients to cope with insomnia.

In both studies by Siebmanns, et al. (2020, 370-371) & Johansson et al. (2012, 46-49) have indicated that forms of management such as sleep hygiene, CBT-treatment that include sleep-rhythm has shown some good outcomes. Sleep-rhythm has been described as selfcare behaviour to maintain balance between activity, rest, and sleep. In this part, Johansson explained that some patients, go to bed without any strategy for sleeping. (Johansson et al. 2012, 46). Those patients just go to bed and fall asleep while other patients may have problems falling asleep or maintaining sleep. In this case, Siebmanns et al. (2020, 48) recommended some strategies such as relaxation and relief of physical symptoms before bedtime.

Relaxation is described as moments of times used before and after bedtime. Relaxation includes all the activities happened throughout the day. According to Johansson et al. (2012, 46) an early rising in the morning and have a quiet relaxing moment before work time and a nap prior to going to sleep later, prevents a patient from falling asleep very early at the evening to avoid midnights waking ups.

Johansson et al. added that, anxiety control and trouble thoughts such as too much worrying during bedtime can strongly difficulty falling asleep as well as maintaining sleep. To achieve better outcome, relaxation activities mind and body soothing such as reading, music or peaceful programs on a radio as well as sense of feeling safe may help with falling asleep and maintaining sleep. (Johansson et al. 2012, 46– 47.)

Relief of physical symptoms includes treating pain with safe pain medications, visit the toilet when having urinating urge, to avoid discomfort in bladder that could disrupt sleeping, using of compression stocking to lessen restless legs, consider quitting smoking to avoid waking up during sleep to urge of smoking as well as reducing sleep apnoea. Using treatments such as nicotine patches can help reducing the waking up to smoke at night. Have a healthy drink when feeling thirsty to avoid acute headaches during the night. (Johansson et al. 2012, 47.)

According to the study by Johansson et al. (2012) & Hale & Marshall (2019) physical activities during daytime are more likely to help recover patients sleeping pattern by maintaining circadian rhythms, reducing daytime longer naps and improve sleeping quality at night. Daily exercise must be three hours before bedtime not within the three hours of bedtime. (Johansson et al. 2012, 49; Hale & Marshall 2019, 227.) Practicing evening activities some hours before bedtime and using prolonged regular low intensity exercises such as yoga, swimming, dancing, long distance walking and cycling have the great tendency to sleep interval and maintaining. For the older persons, moderate regular physical exercise is recommended that help them to feel tired and fall asleep as well as maintain the sleep. (Johansson et al. 2012, 49.)

Sleep-hygiene includes sleeping environment, position, and physical activities (Johansson et al. 2012, 47). In the sleeping environment, patients may have some obstacles such as brightness in the room, a snoring partner, bad air-conditioning, uncomfortable pillow, or mattress affecting them from falling asleep or maintaining sleep. By adjusting these problems, it may help fix the problem. (Johansson et al. 2012, 47; Hale & Marshall 2019.) According to Hale & Marshall

(2019, 227) although keeping sleeping routine such as going to bed and waking up at the same schedule every day is important, the activity might not work for people with sleeping problems, that is why is recommended that patients go to bed only when they feel asleep to help them sleep right away.

Sleep-hygiene includes alcohol consumption, smoking and having drinks with caffeine may cause sleeping difficulties (Hale & Marshall 2019, 227). Alcohol consumption may lead to falling asleep easily but could cause difficulty maintaining sleep and reducing the depth of sleep as well as the effect recovering from sleep as well as nocturia, restless legs syndrome and snoring that may lead to negative effect on healthy sleeping. Caffeine may cause blockage of the adenosine effect on the brain receptor that leads staying alert during bedtime. (Johansson et al. 2012, 49). Other habits affecting sleeping quality such as taking warm bath ninety minutes before bedtime may help with falling asleep (Hale & Marshall 2019, 227).



## 6 DISCUSSION ON FINDINGS

The significant role of nurses in helping heart disease patients with insomnia has been reflected in the studied literature. Nurses' evidence-based knowledge provides such a good platform to promote patients' health. The interaction between a nurse's evidence-based knowledge and a patient's experience and perception of sleep is very important to make an effective patient-specific care-plan. Nurses also should have an understanding about how patients' socioeconomic status, gender, age, and occupation affect sleep quality and eventually establish a strong connection with cardiovascular diseases.

The study carried out at an emergency hospital by Gellerstedt et al. (2015, 3664-3673), found the fact that working nurses had inadequate knowledge about patients' sleep. Nurses were also unaware of patients' sleep-promoting interventions. However, the importance of nurses' knowledge has been reiterated throughout their research. Gellerstedt et al. (2015, 3664-3673) recommended that nurses should be educated enough in sleep knowledge so that they can provide high quality and evidence-based information to the patients. Similar type of research was carried out by Radtke et al. at acutely ill patient ward to assess how much nurses were aware of patients' sleep quality outcomes. They also investigated the role of nurses' knowledge in promoting patients' sleep quality. The study findings indicate that nurses were aware of the negative impacts of insomnia. (Radtke et al. 2014, 178-184.)

Nurses' evidence-based knowledge about sleep helps nurses to understand the impacts of sleep on patients' health. Nurses are in an important position in patients' life due to their close relations. To be able to actively promote patients' health and well-being, both patients and nurses must work hand in hand. (Radtke et al. 2014; Gellerstedt et al. 2015.) According to Radtke et al. (2014, 178-184) about physiological and psychological outcomes related to patients' sleep deprivation has a great effect on patients' ability to recover from insomnia as well as of importance in providing strategies on prevention of insomnia. Some of the studied literature, for example Anna Johansson et al. (2007) have given special

emphasis on heart disease patients' experiences and perceptions about the factors that affect their sleep quality and on how do they develop their own strategies to cope with insomnia. Patients' own perceptions and lifestyle were found very essential for sleep management of the patients with heart disease. Nurses can effectively involve in developing patients' selfcare management strategies. Johansson, et al. (2007, 467-475) have called for a framework to identify internal and external factors that are important to care management for patients.

Nursing intervention in the promotion of patients' health and wellbeing is not restricted to the hospital setting. Rather a nurse plays an important role before and after hospital admission of the patients. Similarly nursing intervention includes both pharmacological and nonpharmacological strategies. For effective intervention, nurses should have evidence-based knowledge from their respective field and holistic understanding of patients' conditions and lifestyle.

## 7 ETHICAL CONSIDERATIONS AND LIMITATIONS OF THE STUDY

In any research it is important to think about the ethical issues from the beginning (Oliver 2010, 9). Ethical issues were taken into consideration at all the phases of the bachelor's thesis. All the literatures were searched legally, using TAMK recognized search engine. The references were mentioned as on TAMK recognized manners. The whole bachelor's thesis was conducted carefully, and the final task is presented according to the agreement with the Tampere University of Applied Sciences. The thesis process was quite interesting and educational. Materials searching was of great time consuming but worth the work. Both writers agreed on a suitable timetable, materials and databases used as well as writing styles. Communication was kept throughout the process. Sharing information and new findings were actively kept.

This bachelor's thesis also has some limitations due to the insufficient literature on the role of nurses in helping heart disease patients with insomnia. That's why the writers also used broader concepts while searching relevant literatures: along with "the role of nurses", the writers also used "the role medical professionals" in data search. Another limitation of this research is that some of the selected literatures have studied bidirectional relation between insomnia and cardiovascular diseases. Though heart disease is one form of cardiovascular diseases, research limitations could be minimized if there were availability of literatures on bidirectional relation between insomnia and heart disease specifically.

## 8 CONCLUSIONS

The bachelor's thesis has dealt three study questions to clarify the role of nurses in helping heart disease patients with insomnia. The relationship between patients and nurses are professional and nurses' working strategies are derived from evidence-based knowledge. The studied literature showed varied results about the professional readiness of nurses for helping heart disease patients with insomnia. However, no literature has denied the importance of nurses' knowledge. Patients' education for successful pharmacological and nonpharmacological interventions as well as patients' selfcare management were found very important in the studied literature.

From the findings, it can be concluded that there is a bidirectional relationship between insomnia and heart disease. Nurses can play an important role in sleep management of patients with heart disease. Here, nurses should keep their evidence-based knowledge updated. For successful self-care management strategies, nurses should work very closely with patients to understand their experiences and perceptions about own situations (Johansson et al. 2007). Nurses should integrate patients' own coping measures with their professional knowledge.

Nursing intervention in the promotion of patients' health and well-being is not restricted to the hospital settings. Rather nurses play an important role before and after hospital admission of a patient. Similarly nursing intervention includes both pharmacological and non-pharmacological strategies. For effective intervention, a nurse should have evidence-based knowledge from their respective field and holistic understanding of a patient's conditions and lifestyle. To promote positive health outcomes, nurses need to understand patient's situations comprehensively. Consequently, nurses will be able to formulate patient-specific care-plan for heart disease patients who are suffering from insomnia. This starting point creates a broader platform for the implementation of non-pharmacological treatment, which will eventually reduce patients' re-admission in hospital and similarly dependence on pharmacological treatment.

## **8.1 Implications and suggestions**

As mentioned earlier, there is a paucity of literature which deals with the role nurses in helping heart disease patients with insomnia. The nurses' support specifically for heart disease patients with insomnia should be investigated in a broader research context, taking specific work settings into account. Based on those research findings the role and support of nurses will be clearer. Accordingly, nurses could be trained and written guidelines for both nurses and patients could be developed.

## REFERENCES

Aboulhosn, J.A., Bozkurt, B., Broberg, C.S., Colman, J.M., Crumb, S.R., Daniels, C.J., Dearani, J.A., Fuller, S., Gurvitz, M., Khairy, P., Landzberg, M.J., Saidi, A., Stout, K.K., Valente, A.M., Van Hare, G.F. 2018. AHA/ACC Guideline for management of adults with congenital heart disease: A report of the American college of cardiology/American heart association task force on clinical practice guidelines. *Journal of the American college of cardiology* 2019, 73 (12), e81-e192.

Alkadhi, K., Zagaa, M., Alhaider, I., Salim, S. & Aleisa, A. 2013. Neurobiological Consequences of Sleep Deprivation. *Current Neuropharmacology* 11, 231-249.

Auoad, R. & Khan, M.S. 2017. The effects of insomnia and sleep loss on cardiovascular disease. *Sleep medicine clinics* 2017 12 (2) 167-177.

Bathgate, C.J & Fernandez-Mendoza, J. 2018. Insomnia, short sleep duration, and high blood pressure: Recent evidence and future directions for prevention and management of hypertension. *Current Hypertension Reports* (2018) 20:52.

Basta, M., Bixler, E.O., Fernandez-mendoza, J., Liao, D., Shaffer, M.L., Vela-Bueno, A., Vgontzas, A.N. 2012. Insomnia with the objective short duration and incident hypertension. *AHA Journals* 14.8.2012;60:929-935.

Beck, C. & Polit, D. 2012: 99, 120-121. *Nursing Research: generating and assessing evidence for nursing practice*. 9th edition. Philadelphia: Lippincott Williams & Wilkins.

Blue, L., Clark, A.L., Dahlström, U., Dickstein, K., Ekman, I., Lainscak, M., Jaarsma, T., McMurray, J.J., McDonagh, T., Ryder, M., Stewart, S. & Strömberg, A. 2014. Self-Care management of heart failure: practical recommendations from

the patient Care Committee of the Heart Failure Association of the European Society of Cardiology. *European Journal of Heart Failure*/ V. 13, Issue 2/ p. 115-126.

Booth, A., Grant, M.J. 2009. A typology of review: An analysis of 14 review types and associated methodologies. *Health info libr j.* 2009; 26:91-108.

Brodnig, R., Horvath, K., Plath, J., Posch, N., Siebenhofer, A. & Wratschko, K. 2020. Written patient information materials used in general practices fail to meet acceptable quality standards. *BMC family practice* 21,23.

Johansson, A., Karlsson, J., Brödje, K. & Edelle-Gustafsson, U: Self-care strategies to facilitate sleep in patients with heart disease. A qualitative study. *International Journal of Nursing Practice* 2012, 18: 44-51.

Canivet, C., Nilsson, Peter M., Lindeberg, Sara I., Karasek, R. & Östergren, P. 2014. Insomnia increases risk for cardiovascular events in women and in men with low socioeconomic status: A longitudinal, register-based study. *Journal of Psychosomatic Research* 76 (2014) 292–299.

Carskadon, M. A. & Dement, W.C. 2011. Normal Human Sleep: An Overview. *Principles and Practice of Sleep Medicine*. M. H. Kryger, T. Roth, and W.C. Dement. St Louis, Elsevier: 16-26.

Conley, S., Redeker, N.S. 2015. Cognitive behavioral therapy for insomnia in the context of cardiovascular conditions. *Curr Sleep Med Rep* 2015; 1:157-65.

Edwards, K.S. & Hoover, V. 2016. Insomnia and heart disease. *American college of cardiology* 2016; 7:25.

Efron, S. E. & Ravid, R. 2019. Writing the literature review: A practice guide. New York, NY: The Guildford Press 2019. ISBN:9781462536894.298.

Fernandez-Mendoza, J. & Vgontzas, A. N. 2013. Insomnia and Its Impact on Physical and Mental Health. National Institute of Health (NIH). Curr Psychiatry Rep. 2013 December; 15 (12):418.

Galvan, J. L. & Galvan, M. C. 2017. Writing literature reviews: A guide for students of social & behavioral sciences. 2017. 7<sup>th</sup> Edition.

Gellerstedt, L., Medin, J., Kumlin, M. & Karlsson, M. R. 2015. Nurses' experiences of hospitalised patients' sleep in Sweden: a qualitative study. Journal of Clinical Nursing (24), 3664–3673.

Godshall, MPRCC 2015. Fast Facts for Evidence-Based Practice in Nursing. Second Edition: Implementing EBP in a Nutshell. Springer Publishing Company, New York.

Hale, D. & Marshall, K. 2019. Sleep and Sleep Hygiene. Home Healthcare Now 2019, V. 37 (4), p. 227.

Heart Disease and Stroke Statistics—2020 Update: A Report from the American Heart Association. Circulation (New York, N.Y.). [Online] 141 (9), e139-e151.

Holloway, I. & Galvin, K. 2017. Qualitative Research in Nursing and Healthcare. 4<sup>th</sup> edition. John Wiley & Sons, Incorporated.



Javaheri, S. & Redline, S. 2017. Insomnia and Risk of Cardiovascular Disease. CHEST 152 (2), 435–444.

Johansson, A., Windahl, Maria., Svanborg, E., Fredrichsen, M., Uhlin, P. Y. & Edell-Gustafsson, U. 2007. Perceptions of how sleep is influenced by rest, activity, and health in patients with coronary heart disease: a phenomenographical study. The Authors. Journal Compilation. Nordic College of Caring Science.

Johansson, A., Karlsson, J., Brödje, K. & Edell-Gustafsson, U. 2012. Self-care strategies to facilitate sleep in patients with heart disease—A qualitative study. International Journal of Nursing Practice 18 (1), 44-51

Kitsiou, S., Mirou, J., Pare`, G. & Trudel, M. C. 2015. Synthesizing systems knowledge: A typology of literature reviews. Information & management 2015 (52) 183–199.

Kumah, E. 2017. Selfcare-management education: A self-care intervention in healthcare quality improvement. Selfcare Journal 2017; 8 (2): 11-18.

Ministry of Social Affairs and Health, Finland. 1992. Act on the status and rights of patients. Section 5 & 6. [https://www.finlex.fi/en/laki/kaanokset/1992/en19920785\\_20120690.pdf](https://www.finlex.fi/en/laki/kaanokset/1992/en19920785_20120690.pdf) Read 1.3.2021.

Nesbitt, L. & Goode, D. 2014. Nurses perceptions of sleep in the intensive care unit environment: a literature review. Intensive and Critical Care Nursing 30 (4), 231-235.

Oliver, P. 2010. The Student's Guide to Research Ethics. 2nd edition. The McGraw Hill, USA..

Pilkington, S. 2013. Causes and consequences of sleep deprivation in hospitalised patients. *Nursing Standard* 27, 35-42.

Polit, D. F. & Beck, C. T. 2011. *Essentials for Nursing Research: Appraising Evidence for Nursing Practice*. 7th edition. Lippincott Williams & Wilkins.

Qaseem, A., Kansagara, D., Forcica, M.A., Cooke, M. & Denberg, T.D. 2016. Management of Chronic Insomnia Disorder in Adults: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med*. 2016; 165 (2): 125–133.

Radtke, K., Obermann, K. & Teymer, L. 2014. Nursing Knowledge of Physiological and Psychological Outcomes Related to Patient Sleep Deprivation in the Acute Care Setting. *Medsurg Nursing* 23 (3), 178–184.

Rouleau, C. R., Toivonen, K., Aggarwal, S. & Arena, R. 2017. The association between insomnia symptoms and cardiovascular risk factors in patients who complete outpatient cardiac rehabilitation. *Sleep Medicine* 32 (2017), 201–207.

Siebmans, S., Johansson, L., Sandberg, J., Johansson, P. and Broström, A. 2020. Experiences and Management of Incidents That Influence Sleep in Patients with Cardiovascular Disease and Insomnia. *Journal of Cardiovascular Nursing* 35 (4), 364-374.

Strömberg, A. 2005. The crucial role of patient education in heart failure. *European Journal of heart failure*. Volume 7, issue (3) p. 363-369.

Taylor, H. 2014. Promoting a patient's right to autonomy; Implications for primary healthcare practitioners. Part 1. Primary health care, V 24 (2), 36-41.

Qaseem, A., Kansagara, D., Forcica, M.A., Cooke, M., Denberg, T. D. 2016. Management of chronic insomnia disorder in adults: A clinical practice guideline from the American College of Physicians management of chronic insomnia disorder for adults. *Ann Intern Med.* 2016;165(2):125–133.

Wetter, T.C., Crönlein, T., & Klösch, G., 2015. Prevention of chronic insomnia. *Somnologie-Schlafforschung & Schlafmedizin* 19, 80– 87.

## APPENDICES

### Key results of the searches

Author, Title, Journal, Publication year, country	Purpose of the study	Method	Main results
<p>Aboulhosn, J.A., Bozkurt, B., Broberg, C.S., Colman, M.J., Saidi, A., Stout, K.K., Valente, A.M., J.M., Crumb, S.R., Daniels, C.J., Dearani, J.A., Fuller, S., Gurvitz, M., Khairy, P., Landzberg, Van Hare, G.F. 2018. AHA/ACC Guideline for management of adults with congenital heart disease: A report of the American college of cardiology/American heart association task force on clinical practice guidelines. Journal of the American college of cardiology 2019, 73 (12), e81-e192.</p>	<p>Practice guideline recommendations for patients at risk of developing cardiovascular disease as well as to improve quality of care for patients in need.</p>	<p>The guideline recommendations are collected from evidence-based literature reviewed that derived from research subjects from reliable sources/database. The guideline continuously reviewed, modified and updated. ACC/AHA constantly re-evaluate the similarity, presentation &amp; delivery of the guideline to ensure accuracy.</p>	<p>Background &amp; pathophysiology of cardiovascular disease, access &amp; delivery of care depending on the progression of the condition</p>
<p>Bathgate, C.J &amp; Fernandez-Mendoza, J. 2018. Insomnia, short sleep duration, and high blood pressure: Recent evidence and future directions for prevention and management of hypertension. Current Hypertension Reports (2018) 20:52 USA</p>	<p>Summarizing evidence-based information for future references</p>	<p>By collecting self-reported symptoms from individuals as population-based studies. The information presented as method measurement in variable, self-report all the findings collected analyzed, evaluated &amp; thoroughly investigated</p>	<p>The study indicated that there is association between chronic insomnia hypertension stage 1 &amp; 2</p>

<p>Blue, L., Clark, A.L., Dahlström, U., Dickstein, K., Ekman, I., Lainscak, M., Jaarsma, T., McMurray, J.J., McDonagh, T., Ryder, M., Stewart, S. &amp; Strömberg, A. 2014. Self-Care management of heart failure: practical recommendations from the patient Care Committee of the Heart Failure Association of the European Society of Cardiology. <i>European Journal of Heart Failure/ V. 13, Issue 2/ p. 115-126</i></p>	<p>The aim is to provide guidelines recommendations to patients in need when they meet healthcare providers</p>	<p>Evidence-based researched and reviewed guidelines with continuous updating of information from current guidelines with recognition of future research prospective to ensure the accuracy and up to date information to patients</p>	<p>The results are put together in a leaflet designed that provides advice about lifestyle and self-management strategies</p>
<p>Broström, A., Johansson, L., Johansson, P., Sandberg, J. &amp; Siebmans, S. 2020. Experiences and management of incidents that influence sleep in patients with cardiovascular disease and insomnia. <i>Journal of cardiovascular nursing. Vol 35 (4) 364-374</i></p>	<p>The aim was to describe influence of &amp; management of sleep among patients with cardiovascular disease &amp; insomnia</p>	<p>Qualitative descriptive by using the critical incident technique with the collection of both male &amp; female patients age range of 47-83 that are diagnosed with either insomnia or both CVD &amp; insomnia</p>	<p>Four main categories were identified such as cognitive, physical, behavioral, &amp; social. concluded that patients experienced both physical &amp; cognitive disturbance in their heart problems.</p>
<p>Brödje, K., Edell-Gustafsson, U., Johansson, A. &amp; Karlsson, J. 2012. Self-care strategies to facilitate sleep in patients with heart disease. A qualitative study. <i>International Journal of Nursing Practice 2012, 18: 44-51. Sweden.</i></p>	<p>Aimed to investigate and describe the self-care management strategies used by heart disease patients to facilitate sleep.</p>	<p>A qualitative and quantitative studies</p>	<p>The study revealed five basic categories such as emotions, cognition, physical symptoms (reactions), behaviours, sleep environment, self-care management strategies.</p>
<p>Canivet, C., Nilsson, Peter M., Lindeberg, Sara I., Karasek, R. &amp; Östergren, P. 2014. Insomnia increases the risk for cardiovascular events in women and in men with low socioeconomic status: A longitudinal, register-based study. <i>Journal of Psychosomatic Research 76 (2014) 292-299. Sweden &amp; USA.</i></p>	<p>The purpose was to find out correlation between symptoms of insomnia, sleep duration or both are associated with heart disease incidence. The study also investigated the potential interaction between insomnia, socioeconomic status and gender could be risk factor for CVD</p>	<p>A longitudinal, register-based study</p>	<p>The study found an association between insomnia symptoms and cardiovascular event. The findings suggest that it is a worthwhile approach to take gender and socioeconomic status into account in sleep and cardiovascular related research.</p>
<p>Cooke; M., Denberg, T.D., Forciea M.A., Kansagara, D. &amp; Qaseem, A. 2016. Management of chronic insomnia disorder in adults: A clinical practice guideline from the American College of Physicians management of chronic insomnia disorder for adults. <i>Ann Intern Med. 2016;165(2):125-133.</i></p>	<p>To provide evidence-based approach and clinical recommendations on management of chronic insomnia for adults</p>	<p>The guideline is based on randomized systematic review. Outcomes are evaluated by questionnaires as well as patient-reported sleep outcomes then graded by using American college of physicians' evidence and recommendations grading system</p>	<p>Two recommendations are provided. 1: adult patients receive cognitive behavioral therapy for insomnia. 2: Clinicians shared decision-making approach</p>

<p>Crönlein, T., Klösch, G., Wetter, T.C., 2015. Prevention of chronic insomnia. <i>Somnologie-Schlaforschung &amp; Schlafmedizin</i> 19, 80-87.</p>	<p>To provide prevention measures for patients suffering from insomnia</p>	<p>Evidence-based literature review</p>	<p>Recommendations on cognitive, behavior-related and relation-oriented in prevention of insomnia were provided and some patients showed evidence of successful improvement</p>
<p>Gellerstedt, L., Medin, J., Kumlin, M. &amp; Karlsson, M. R. 2015. Nurses' experiences of hospitalized patients' sleep in Sweden: a qualitative study. <i>Journal of Clinical Nursing</i> (24), 3664-3673. John Wiley &amp; Sons Ltd, USA.</p>	<p>Study aimed to describe nurses' experience of patients' sleep at an emergency hospital and their perceptions of sleep-promoting interventions</p>	<p>By collecting data from four focus groups &amp; interviewing seven individuals, twenty-two registered nurses participated. The data analyzed using a qualitative analysis.</p>	<p>The study found that nurses have inadequate knowledge to promote patients' sleep quality</p>
<p>Hale, D. &amp; Marshall, K. 2019. Sleep and Sleep Hygiene. <i>Home Healthcare Now</i> 2019, V. 37 (4), p. 227.</p>	<p>Information about types of sleep disturbance that relate to heart disease and guideline recommendation on how to educate patient/caregiver on how to improve sleep quality as well as prevention of insomnia</p>	<p>Qualitative literature reviewed article</p>	<p>Important roles and information in assessing sleep problems and significant guidelines explained</p>
<p>Javaheri, S. &amp; Redline, S. 2017. Insomnia and Risk of Cardiovascular Disease. <i>CHEST</i> 152 (2), 435-444. American College of Chest Physicians. Published by Elsevier Inc.</p>	<p>The purpose of the study was to analyze the association between insomnia and cardiovascular diseases (CVD) as well finding out if the treatment of insomnia reduces the risk of acute coronary syndrome</p>	<p>The paper reviewed recent studies of insomnia and cardiovascular disease.</p>	<p>The findings showed prevalence of insomnia among patients with cardiovascular diseases &amp; heart failure. The study suggested that controlled trials are needed to achieve a better understanding of the way by which insomnia contributes to CVD</p>
<p>Johansson, A., Windahl, Maria., Svanborg, E., Fredrichsen, M., Uhlin, P. Y. &amp; Edell-Gustafsson, U. 2007. Perceptions of how sleep is influenced by rest, activity, and health in patients with coronary heart disease: a phenomenographical study. The Authors. <i>Journal Compilation. Nordic College of Caring Science.</i></p>	<p>The aim was to find out the knowledge through patients' perspective.</p>	<p>The data analyzed by using phenomenographic method.</p>	<p>The findings suggested identification of patients' symptoms, needs, intentional/unintentional selfcare management strategies &amp; lifestyle</p>
<p>Kumah, E. 2017. Selfcare-management education: A self-care intervention in healthcare quality improvement. <i>Selfcare Journal</i> 2017; 8 (2): 11-18. Institute of management, Suola Superiore Sant Anna. Italy</p>	<p>To promote self-care management through education by finding suitable and appropriate measures according to an individual</p>	<p>A qualitative literature review content analysis by using Academic search engines</p>	<p>The study indicated that self-care management that are based on self-efficacy principle has been beneficial</p>

<p>Radtke, K., Obermann, K. &amp; Teymer, L. 2014. Nursing Knowledge of Physiological and Psychological Outcomes Related to Patient Sleep Deprivation in the Acute Care Setting. <i>Med-Surg Nursing</i> 23 (3), 178-184.</p>	<p>Aimed to assess nurses' knowledge about the quality of sleep outcomes in the acutely ill patient as well as evaluating the impact of nurses' knowledge of the effects of quality sleep on their choice of activities to promote patient rest.</p>	<p>The study method was literature review. 20 articles reviewed to find out related content for nursing knowledge of sleep deprivation in the acute care setting.</p>	<p>The study resulted those nurses from both were knowledgeable in recognizing negative effects of insomnia. Despite their knowledge, however, barriers to sleep promotion still exist.</p>
<p>Rouleau, C. R., Toivonen, K., Aggarwal, S. &amp; Arena, R. 2017. The association between insomnia symptoms and cardiovascular risk factors in patients who complete outpatient cardiac rehabilitation. <i>Sleep Medicine</i> 32 (2017), 201-207</p>	<p>Aimed to investigate whether completion of exercise-based cardiac rehabilitation program associated with improvements in both cardiovascular risk factors and vice-versa.</p>	<p>A 12-week outpatient program involving 80 participants with cardiovascular disease. Supervised moderate exercise twice a week included monitoring of symptoms of insomnia, bp, BMI, psychological/physiological distress &amp; lipid profile</p>	<p>The studied categories may have impact in the association between insomnia symptom severity and CVD risk. Sleep is an important factor</p>
<p>Siebmans, S., Johansson, L., Sandberg, J., Johansson, P. and Broström, A. 2020. Experiences and Management of Incidents That Influence Sleep in Patients with Cardiovascular Disease and Insomnia. <i>Journal of Cardiovascular Nursing</i> 35 (4), 364–374.</p>	<p>The study aims to describe experiences that influence the sleep difficulties &amp; management among patients with cardiovascular disease &amp; insomnia.</p>	<p>A qualitative &amp; descriptive study by using critical incident technique method.</p>	<p>Four categories of sleep disturbance such as behavioural, cognitive, social &amp; physical were identified. cognitive, social, physical, and behavioral. Professional interventions were suggested in the study</p>