# Nurses' sick leaves and promotion of healthy diet in workplace

A literature review

Daiga Garsila

Bachelor's Thesis

Degree Programme in Nursing

2018

| DEGREE THESIS | |
|---|---|
| Arcada University of Applied Science | |
| | |
| Degree Programme: | Nursing |
| | |
| Identification number: | 18913 |
| Author: | Daiga Garsila |
| Title: | |
| Supervisor (Arcada): | Emilia Kielo |
| | |
| Commissioned by: | |
| | |

Abstract:

Nursing profession requires a lot of demands and responsibilities, which leads to burnout, stress and lack of time. In consequence, nurses oftentimes develop unhealthy snacking habits and lack proper nutrition. Therefore, it is important to promote and develop healthy lifestyle in workplace by increasing nurse nutrition knowledge and motivate them to reach their goals. The aim of the research is to explore how unhealthy diet, that is linked to obesity and its associated diseases, relates to nurse sick leave. In addition, the research examines general nurse nutrition knowledge and explores ways to promote healthy diet in workplace, using theoretical framework based on Nola J. Penders' ''Health promotion model''(1982). The research material consists of 10 reliable academic articles, which are analyzed using inductive qualitative method. Articles being used are contracted from scholarly databases, such as Science direct, Research gate and PubMed. The results reveal no strong link between unhealthy diet and nurse sick leave, however psychosocial influences are found to be a major factor in nurse absenteeism. Furthermore, the research outlines environmental factors, that lead nurses to optimize health in workplace. The limitations for the research include lack of quantitative data and exclusion of fee-request articles. The researcher recommends including mental well-being strategies for promoting healthy lifestyle in workplace and better nutrition education for nurses.



| Keywords: | Healthy diet, promotion, nutrition, sick leave, nurses |
|---|---|
| Number of pages: | 39 |
| Language: | English |
| Date of acceptance: | |

# CONTENTS

**1 Introduction** ..... **7**

**2 Background** ..... **8**

2.1 Concepts associated with the study ..... 8
2.2 Health promotion ..... 8
2.3 Definition of healthy diet ..... 10
2.4 Unhealthy diets' effects on health ..... 12
2.5 Obesity ..... 12

**4 THEORETICAL framework** ..... **15**

4.1 Nola's health promotion model ..... 15

**5 AIM and Research questions** ..... **17**

**6 METHODOLOGY** ..... **18**

6.1 Literature review ..... 18
6.2 Data search and collection process ..... 18
6.3 Data analysis ..... 20

**7 Findings** ..... **25**

7.1 Workplace and nurses ..... 26
7.2 Nurse nutrition knowledge ..... 27
7.3 Health promotion in nurses ..... 28

**8 Discussion of findings** ..... **29**

8.1 Findings relating to theoretical framework ..... 31

**9 Ethical considerations** ..... **31**

**10 Limitations and recommendations for further research** ..... **32**

**11 Conclusion** ..... **33**

**References** ..... **34**

## Tables

Table 1. Inclusion and exclusion criteria
Table 2. Summary of included studies

## Figures

Figure 1. Healthy eating pyramid
Figure 2. Inductive research analysis

## Abbreviations

WHO world health organization

BMI body mass index

MSD musculoskeletal disease

CVD cardiovascular disease

MD mental disorder

RD respiratory disease

PTSD post-traumatic stress disorder

# 1 INTRODUCTION

A proper nutrition plays a considerable role in illness recovery and disease prevention. The process of healthy lifestyle involves educating and motivating oneself to achieve long-term benefits. Nutrition education is part of nurse job, whether it's in recovery settings or long-term care. Since nurses generally spend more time with patients during their recovery, they are also the ones that patients seek answers from. This puts nurses in great position to educate, but they should also practice those teachings themselves. Basic and clinical nutrition implementation should be recognized in nursing practice as well as in school curriculum for nursing students (Nutrition and nurse education, 2002). Nursing students are more aware of healthy lifestyle, they get educated on patient treatment and can adapt healthy behavior along the way. However, academic demands reduce time and students lack exercise, sleep and proper nutrition (Health behaviors of Nursing students, 2002). Same happens in workplace after graduation. There isn’t a significant difference of pre- registered and registered nurse health behaviors. (Malik and Blake, 2011)

As a future nurse, I aim to be a role model for patients and nurses on education of healthy nutrition. During my practical trainings I have observed that nurses and other health care professionals don't often eat healthy meals, therefore I became interested in the topic of healthy diet for nursing staff. I believe this research process will give me deeper knowledge that I can implement in my career as a nurse.

I want to thank my supervising teachers for helping me in my thesis writing process from the very beginning.

# 2 BACKGROUND

## 2.1 Concepts associated with the study

This section will explain the main concepts referred to in the thesis work. The following concepts are used by the researcher as keywords investigating articles for the final analysis and discussion, they also introduce the reader with issues this research is investigating and provide the chosen source of evidence that was selected by the researcher.

## 2.2 Health promotion

The World Health Organization defines health promotion to be process of action that permits individuals to increase control over health and gradually improve it (WHO, 2016). Promotion of health should be aimed to reach the optimal outcome and the process involves not only the examination of individual characteristics, such as emotional, social or mental, but also external components that have influence, like environment and economics. A part of health promotion implicates not only prevention of disease, but also mental well-being that is part of wholeness of holistic care of a person. Following and maintaining guidelines of health promotion recommendations requires certain motivation and self- control in-order to succeed (Evaluation in health promotion, 2001).

In a globally unstable economic world, the focus of health promotion shifts themes and sometimes it proves difficult to maintain relevancy. However, the growing amount of diseases that could be prevented is attention requiring. A study conducted in United States (Colditz, 1999) estimated the direct cost of type 2 diabetes attributed to obesity to be 32.4 billion. Since then, the number of diagnoses has increased. Cardiovascular diseases have

been the leading cause of death for years. Most of the CVD's can be prevented through controlling the risk factors, which include unhealthy diet, physical inactivity, smoking and overuse of alcohol (WHO, 2015). It is difficult to succeed in promoting change of lifestyle as in most parts of the world individuals are aware that smoking or inactivity is consequential in long term, yet change is not implied as CVD's are still statistically leading cause of death (National center for health statistics, 2016).

Nurses are in a great position to be advocates for health promotion as they have most interactions in care process of the ill. In order to promote health to patients according to their circumstances the nurse first has to have sufficient knowledge that is up to date. Having a sufficient knowledge of nutrition will allow nurse to apply that knowledge in own life practice and will be beneficial for own health. Educating patients on illness management is not enough benign for a long-term improvements, therefore the patient also has to be educated on how to remain healthy which will decrease the likelihood of returning back to hospital (B. Raingruber, 2014). However, weather nurses choose to incorporate healthy lifestyle in their own lives should not be a perimeter of how well they perform at workplace and doesn't mean they can't be good health promoters. There is not a consistent association between overweight or physical inactivity and health promotion. Instead, nurses who possess confidence and skills are more likely to rise health promotion issues with their patients (M. Kelly, J. Willis, S. Sykes, 2017).

## Nurses' sick leaves

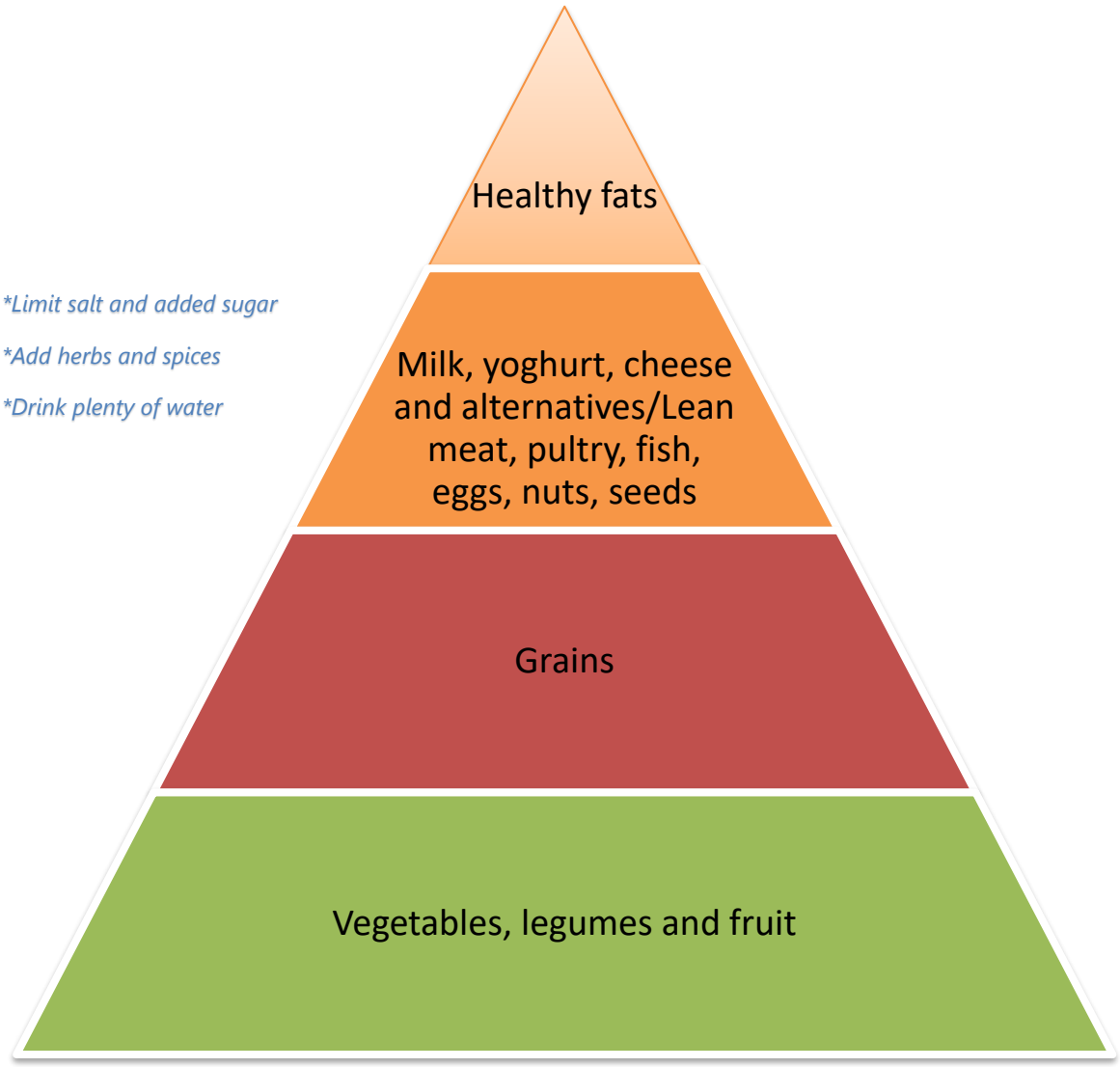
Physical activity and cardiometabolic health are both lacking for nurses working 12-hour shifts and longer. Cardiometabolic health encompasses cardiovascular and metabolic diseases such as type 2 diabetes (Reed & Prince, 2018). However, other influences, such as mental health, could be the cause of physical inactivity and preventable cardiovascular diseases. Social acceptance and work environment greatly affect nurses' mental health, leading to work absenteeism and unhealthy coping habits (Roelen & van Hoffen, 2017).

## 2.3 Definition of healthy diet

A combination of healthy nutrition and physical activity can prevent development of diseases such as obesity, high blood pressure and other (WHO, 2015). However, for this research only the healthy diet will be examined. The figure below represents layers of different food groups recommended for daily consumption to maintain good health. The base layers represent fruits, grains, vegetables and legumes, which takes up 70% of the recommended food intake a day. Middle layer consists of dairy products, which also mentions alternatives for non-diary options such as soy or almond milk and tofu. On the very top layer there are healthy fats such as oils that preferably contain non-saturated fats (Nutrition Australia, 2013). According to both, WHO and Australian Dietary Guidelines, a strong recommendation of minimizing salt and sugar intake is mentioned to prevent risk of heart disease, diabetes and even some forms of cancer.

The healthy eating pyramid refers to adults 19-50 years of age, the reason being that this research focuses on adult health care workers, however it was mentioned that the pyramid can be generally applicable to 1-70 year olds as well (Nutrition Australia, 2013). It should also be noted that different countries each follow slightly different dietary recommendation. The differences may depend on the specific region or culture, however in many places around the world the basic guidelines remain consistently similar.

*Fig 1: Healthy eating pyramid* according to Nutrition Australia (Healthy eating pyramid, 2013).



## 2.4 Unhealthy diets' effects on health

People tent to underestimate the unhealthy choices made regarding diet. When these diets are analyzed based on scientific standards, the outline gets more realistic. Those who evaluate their diets optimistically are less likely to change their habits in order to improve health (M. Sorensen & L. Holm, 2016). Unhealthy diet increases the risks for chronic diseases, such as cardiovascular diseases, diabetes and other conditions associated with obesity (World Health Organization, 2018). "Modern diet", which consists of empty calorie intake lacks nutrients that body uses to stay healthy. Over- nutrition can lead to obesity, cancer and diabetes (Shridhar & Rajendra, 2015).

## 2.5 Obesity

According to World Health Organization, overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health (WHO, 2018). In adults, BMI (Persons weight in kg divided by the square of their height in meters)) greater than or equal to 25 is considered overweight and BMI greater than or equal to 30 is considered to be obese. BMI is measured taking individuals weight in kg and dividing it by the square of their height in meters. However, BMI should be considered as a rough guide as it may not correspond to the same degree of fatness in different individuals (WHO, 2018). According to Scott Kahan (WebMd, 2014), traditional definition of measuring obesity by determining BMI is flawed because judging whether the person is obese based on their size is slightly outdated and incorrect. People may be overweight but healthy and their BMI doesn't reflect on their health risks. Reasons taken into consideration also have to be muscle vs fat factor as some people might have a body makeup consisting of more muscle than fat, in contrast, elderly people might have low levels of muscle and more levels of fat but show a normal BMI when in fact they are sicker.

Thus, in this thesis, health risks associated with unhealthy diet will not be solely based on BMI, but in BMI which is accompanied with health problems such as cardiovascular diseases or diabetes.
Since obesity is linked to many health conditions that are accompanied by multiple risks, main of those conditions which will be discussed in headings below.

## Diabetes

Diabetes 2 is the most common type of diabetes. The risk factor for developing diabetes includes excess weight, family history, poor diet and physical inactivity (Healthline, 2017). Therefore, being obese or overweight because of poor diet already puts an individual in the risk category.
Diabetes is a life- long condition that occurs when glucose in the blood is too high. The body has to convert glucose into energy with the help of insulin, individuals who suffer from diabetes don't produce insulin or don't produce it sufficiently (NIH, 2016). According to National institute of Diabetes and digestive kidney disease (2016), type 2 diabetes accounts for about 90-95% of all diabetes diagnosed cases in adults. Many diabetes cases go undiagnosed. It is anticipated that worldwide deaths from diabetes will double by 2030 (World Health Organization, 2010).

## High Blood pressure

Hight blood pressure, also known as hypertension, is one of the major risks for cardiovascular diseases. Hypertension resulting from poor diet can be linked to nutritional choices such as high sodium and saturated fat intake, which usually comes from processed foods. There is a positive association between hypertension and insulin resistance. When patients have hypertension and diabetes, which is a common combination, their risk for cardiovascular disease doubles (American Heart association, 2015).

## Heart disease and stroke

Extra weight makes a person more predisposed to high blood pressure and high cholesterol, both of which are conditions for heart diseases (Coronary artery disease, Ischemia, heart attack, arrhythmia) or a stroke (Webmd, 2016). According to Centers for Disease Control Prevention ( Heart disease facts, 2017), diabetes, overweight, obesity and poor diet are the lifestyle factors that put individuals at risk of developing heart diseases. They also state in facts that in US about 610,000 people die of heart diseases every year, of which Coronary heart disease is most common.

According to Centers for disease Control and Prevention (2017), Stroke is the fifth leading cause of death in US, and according to World Stroke Campaign, stroke claims 6.2 million lives each year. There are risk factors that individual can control besides race, age and gender that can help prevent the stroke, which are diet, smoking, cholesterol and blood pressure. A long-term prevention plan also includes promotional action in communities, which will lower the coasts of stroke care. Primary method includes the prevention of stroke before it happens. Such as tobacco control and sufficient nutrition. Secondary prevention includes prevention of recurrence of stroke, which can be done through health-sector collaborations and campaigns (Pandian & Gall & Kate, 2018).

# 4 THEORETICAL FRAMEWORK

In this chapter the health promotion theory used to support the research is discussed. The theory used in the research is Nola J. Pender's Health promotion model. Theoretical framework is used to guide and provide structure for the researcher through their research question, it acts to help understand and explain the reasoning behind the process. Theoretical framework can be used to link knowledge from theory to research. Theories support researchers study and in some cases it can even be challenged, when researcher makes conclusions it can, undermine the theory chosen or strengthen it (P. Ngulube & E. Mathipa & M. Gumbo, 2015).

## 4.1 Nola’s health promotion model

The health promotion model was designed by Nola J. Pender in 1982 and revised in 1996, it describes a multidimensional nature of persons as they interact within their environment to pursue health. Nola's model makes four assumptions (Pender, 1982).
The four assumptions:
1.Individuals seek to actively regulate their own behavior
2.Individuals interact with the environment, transforming it and being transformed themselves over time
3.Nurses are part of interpersonal environment which exerts influence on others
4.Self-initiated reconfiguration of person-environment interactive patterns is essential to changing patterns

Most of Pender's assumptions are related to environment, Pender argues, that these behaviors would influence health promotion. On top of these four assumptions she states 13 other theoretical statements that are drawn from the model. They will not be stated but will be used to support reasons behind choosing this model for the research.

Supporting reasons:

1. Model recognizes that environmental changes are needed to help increase possibility for better choices, in healthy diet that's food choices. The environmental changes for this research mean nurses having access to healthy foods near hospital, free snacking options that are often accessible at coffee rooms, etc. Other changes include workplace promotion that incorporates social support.

2. Persons are more likely to engage in behavior if someone else is promoting it. Nurses, as health professionals, should be the ones promoting health through their own modelling behavior.

3. Persons commit to behavior if there is a benefit. Educating nurses about healthy diet choices and ways to improve it will lead to health benefits such as weight loss, decreased BP and decrease of risk for cardiovascular diseases.

4. Positive affect associated with the behavior will increase the commitment and action for promotion of healthy diet.

# 5 AIM AND RESEARCH QUESTIONS

The aim of the research is to explore how unhealthy diet is related to obesity and its associated diseases and increased amount of sick leaves among nursing staff. Additionally, the research will study nurse nutrition knowledge and look at some of the main reasons that would influence nurses to choose unhealthy diet. Finally, the study explores ways to promote healthier diet choices in workplace based on Nola J. Pender's health promotion model. There are three research questions. The researcher will answer the three questions through analyzing 10 articles. The research questions are following:

Research questions:

1. Does unhealthy diet has a relation to nurse sick leave?
2. How well are nurses educated about nutrition?
3. How can healthier diet choices be promoted to nurses?

# 6 METHODOLOGY

## 6.1 Literature review

Literature review includes critical analysis of materials that have already been published and is a widely used method among researchers. The process of material analysis necessitates organizing and evaluating published articles which further helps identify various contradictions and irregularities in literature. By examining the content of articles, researcher clarifies the problem and can make further recommendations to progress the area of subject (American Psychological Association, 2009).

## 6.2 Data search and collection process

The data gathered for this literature review research were collected through searching electronic databases and digital libraries of academic journals. Reliability of an article can be examined following few aspects. Publications have to present references that can be verified, providing evidence behind conclusions and analysis. An article without strong bias excludes personal agenda and has a scientific proof of facts that is consistent and structured throughout the material and includes peer review. Article in research has more value if it has been assessed by professionals in the field. Establishing these criteria strengthens researchers own study (Sutton & Austin, 2015).

The following databases were used to find relevant materials for the research: PubMed, academic search elite EBSCO, Sage journals, ScienceDirect and ResearchGate. The researcher used key words that were closely related to the aim and research questions to search for relevant articles. The terms used were healthy diet, promotion, nutrition, knowledge, sick leave, obesity. The following amount of articles were found in databases: ScienceDirect (2444), academic search elite EBSCO (46,342), PubMed (26), Sage journals (3069). The search engine presented a large choice of articles, therefore it was necessary to narrow down the search in order to look for articles that help answer specific

research questions. Furthermore keywords were modified using, for instance " nurse knowledge of nutrition ", " nurse sick leave", " nurse health promotion" and "workplace health promotion". This presented more specific options and decreased the amount of non-related articles as follows: ScienceDirect (16,054), academic search elite EBSCO (47), PubMed (351), Sage journals (21937). Eventually it became clear that the main keywords for topics were: nurse, nutrition, promotion. The final articles for the study were chosen based on the relevance to the topic, research questions and health promotion model used in the study.

Some of the articles required a requested full-text access from ResearchGate. The preferred articles were those which were published most recently between the years 2013-2018, however few materials from earlier years (2000-2007) were included in this research for their relevance to the topic.

The selection criteria for the ten articles that are further analyzed and discussed in this research is shown in the inclusion and exclusion table 1.

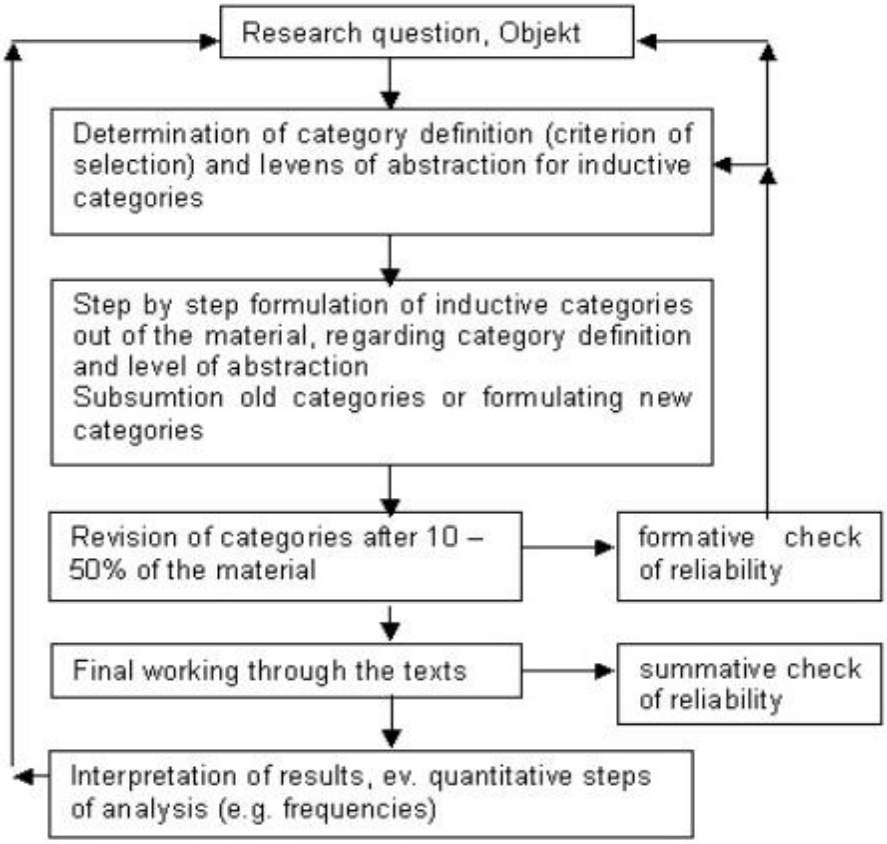
*Table 1: Inclusion and exclusion criteria*

| Included | Excluded |
|---|---|
| Articles conducted in English language | Studies exclusively measuring BMI |
| Articles published between 2000-2018 | Articles related to other professions than nursing |
| Scientific and reliable sources | Studies not conducted in English |
| Full text | Articles from non-academic databases |

## 6.3 Data analysis

Data analysis is an important part of research. It is a critical overlook and interpretation of the findings. The process of data analysis is conducted throughout the whole research process, not just the end. To start process of collecting data, researcher has to link topic, aim and research questions to relevant studies to be able to justify the chosen data and prove it relevant to the context (Watling and James, 2012). To prove absence of own bias, the information analyzed from materials should be delivered in a form of clear report of findings that are completely exclusive of researchers own interpretations and opinion (Buetow, 2019). An inductive type of thesis writing is often associated with qualitative research that begins with the researcher having a completely open mind and no biased expectations towards the findings. The goal is to further the field of research topic from concluding already existing data (Gabriel, 2013). The inductive qualitative data analysis provides simple and forthright way to gather findings linked to questions proposed in early stages of research. The raw data gathered is summarized in small texts, which captions the most important findings related to research questions. The data is furthermore assessed for trustworthiness, which includes participant/author evaluation and evaluation of previous studies related to the topic (D. Thomas, 2006). Figure 2 gives an idea of inductive data analysis process.

*Figure 2: Inductive research analysis* Source: P. Mayring 2000, Qualitative content alaysis




A total of 10 articles were selected and each one is briefly described (Table 2: Summary of included articles) to give an overall grasp of each study. The chosen articles were linked to research questions and helped answer them. The researcher decided to include method, results and interest point to present main highlights of each study as it was presented in the material. The materials were selected to be conducted in different geographical locations such as United States, Australia and Europe to give a more global perspective. To have a more practical approach of evaluation and comparison of the materials, the researcher printed out all the articles for a better and more organized overview. All the articles were read multiple times to comprehend the fundamental content and analyze the information carefully. Finally, the findings were analyzed and discussed, and recommendations and conclusion was made.

*Table 2: Summary of included studies*

| Articles | Authors | Methods | Results | Interest point |
|---|---|---|---|---|
| Lifestyles and Health-related outcomes of U.S. Hospital nurses (A systematic review), 2018 | S. Priano, O. Hong, J. Chen | Systematic literature review | Nurses inactivity and poor diet increases risk for CVD. 53%-61% of nurses are having a poor diet. | Fewer than 5% of nurses in U.S. have five healthy lifestyle behaviors (diet, activity, smoking, alcohol, weight) |
| Work, Obesity and occupational safety and health, 2007 | P. Schulte, G. Wagner, A. Ostry | | Work and obesity both attribute to morbidity but each exist on separate domain. | Work environment can promote or discourages development of obesity. |
| Associations between common diseases and work ability and sick leave among health care workers, 2017 | S. Berg, A. Burdorf, S. Robroek | Study conducted from 18 health care organizations in Netherlands. Anonymous questionnaire with questions on lifestyle, work and health with total of 8364 health care employees surveyed. | Those with MSD, CVD, MD and RD were more likely to have low work ability. Largest group (39.1%) of employees which also had MSD, reported on taking more sick days (51.1% of normal weight), of those 13.3% were on long term leave and 38.5% on 1-9 day leave. | Obesity and sick leave was associated only for those with common disease and MSD. Obesity and low work ability associated only in those with RD. |
| The nutrition knowledge of Australian | C. Schaller, E. James | A descriptive cross-section design to determine nutritional | The mean nutrition knowledge score was 28.9 out of highest possible of 48 (Equivalent to 60.2%) Older nurses | The nutrition knowledge was concluded to be |

| | | | | |
|---|---|---|---|---|
| nurses, 2005 | | knowledge with a total of 103 useable questionnaires to analyze. Questionnaires were long and detailed. | with more experience got higher scores. | low to moderate. |
| The nutrition knowledge level of physicians, nurses and nutritionists in some educational hospitals, 2013 | M. Abdollahi, A. Houshiarrad, M. Abtahi, M. Esmaeli | Observation method and multiple-choice questionnaire. The questionnaire was divided in two sections- essential nutrition and clinical nutrition. Total of 198 subjects were participating, 81 of which were nurses. | All the participants had the mean score of about 94% for perceived knowledge, however the actual knowledge was lower. Nutritionists scored 87%, physicians 79% and nurses 76%. | Weak nutrition knowledge for 1/3 of nurses. |
| Changing diet and physical activity in nurses: A pilot study and process evaluation highlighting challenges in workplace health promotion, 2017 | L. Torquati, T. Kolbe-Alexander, T. Pavey, M. Leveritt | A 3-month pilot intervention to promote diet and physical activity behavior through self-monitoring, goal setting and social support (using pedometers, app, Facebook group). A 6-month follow-up assessment was conducted to | At the end of 3 months food and vegetable intake significantly increased (decreased slightly after 6-month follow up), however physical activity significantly decreased. | Most participants focused only on diet change, reporting that focusing on diet and physical activity at the same time was too difficult and time consuming. Nurses valued social support more in goal of succeeding. |

| | | | | |
|---|---|---|---|---|
| | | see maintenance. Total of 47 nurse participants. | | |
| Health promotion in nurses: Is there a healthy nurse in the house, 2007 | D. McElligott, S. Siemers, L. Thomas, N. Kohn | Examination of health-promoting behaviors of 149 nurses using Health Promotion Model. Self-administered questionnaire with 52 questions on wellness (nutrition, stress, spirituality, relations, etc.). Choice of answers was rated 1-4. | Weakest scores in stress management, health responsibility and physical activity. Nutrition, spirituality and interpersonal relationships got the highest scores. | During unit discussion, staff identified barriers to stress management (weakest score) being lack of time and support, inability to choose a method, environmental factors. Health promotion was determined to be a concern in the sampled area (U.S). |
| Nurses' self-reported knowledge about and attitude to nutrition- before and after a training programme, 2011 | M. Bjerrum, M. Tewes, P. Pedersen | Special training programme (based on experimental learning theories) for nurses responsible for nutrition. Included was 5 modules of 3-4 day training. | After the training nurses were more aware of their role and acted more responsibly in accordance. | Short-term training was not sufficient as nurses still referred to aspects in broad terms. |
| Employment and sickness absence: The same factors influence job | M. Josephson, P. Lindberg, M. Voss | A 3-year questionnaire survey was answered by 2293 working registered nurses | Nurses below the age of 50 were more likely to leave job. The reasons for sick days and resignation were: bad working conditions, health | Reasons for resignation and absenteeism included nega- |

| | | | | |
|---|---|---|---|---|
| turnover and long spells of sick leave-a 3 year follow up of Swedish nurses, 2008 | | | problems and possibility of a new job. | tive social/organizational environment and poor health. |
| Comfort eating in nurses linked to stressful experiences or lifestyle, 2014 | Nursing Standard | In the United States 49,000 nurses were questioned about lifetime trauma experiences and assessed for food addiction. | Results showed 81% of nurses had experienced at least one traumatic event, 6% no traumatic event and 18% with 6-7 PTSD symptoms. | Effects of PTSD should include psychological intervention. |

# 7 FINDINGS

In this section the researcher will present the findings from the ten chosen articles from which the results will be sectioned in 3 parts. In the first part the author will reveal findings from 5 articles that were related to nurse and health care workers sick leave, work ability and some lifestyle challenges they are facing in the workplace. This will help examine the first question proposed in the thesis background chapter.

Second section will present findings from 3 articles on nurse nutrition knowledge. Although there was no question of nurse nutrition knowledge in the background section, the researcher decided to include the 3 articles to help establish a link between knowledge and practice in promoting healthy diet. There is a gap between nursing knowledge and practice, which can be closed with better education that is also applied in practice and the two are inter-dynamic (Ajani and Moez, 2011).

The third part will present findings from 2 articles on health promotion. These findings will help examine the final question from background section.

## 7.1 Workplace and nurses

A study conducted by Berg and Burdorf (2017), investigated the relations between common diseases and weather they had influence on work ability and sick leave. Analyzing 8364 Dutch health care workers, a self-reported information was collected from both healthy workers and those with common diseases. It was concluded that the highest rates of low work ability and sick leave were among those with unfavorable psychosocial work-related factors, regardless of the status of their health. Furthermore, factors such as physical and lifestyle practices were less associated with low work performances and sickness leave, however those with common disease had lower work ability and more sick leave than the ones who were healthy. A similar result was found in Josephson and Lindberg (2008) study, where sick leave was more prominent due to social exclusion and work changes. Absenteeism due to health problems wasn't listed as a primary reason.

In regards to work performances and obesity, it was shown that only association was found between those obese with RD. Physical factors related to work, such as heavy lifting and working in static posture were considered as a risk but was not significant (Berg & Burdorf, 2017).

A study by Schulte and Wagner (2007) tried to draw consequences associated with obesity and its related risk diseases such as CVD's, MD's and RD's to work exposures such as heavy liftings, repetitive movements and muscle overuse. It was presented through 5 models, that work exposures can lead to obesity and obesity to another disease. Also, that obesity can lead to work accidents. The study concluded that work and obesity both associate with health risks but each are separate because employers are responsible for preventing work related incidents and employees are responsible for prevention of obesity. Promotion of safety and health was recommended for better and safer workplace

environment. Both of these studies mention CVD's as being risk factors. Cardiovascular disease risks can contribute to inactivity and poor diet, as it was concluded in a systematic study in U.S. by Priano and Hong (2018).

It was concluded from 2 other studies (Priano,2018 and Berg, 2017), mentioned in the systematic review that unhealthy lifestyle, particularly poor diet, was linked to CVD diseases such as diabetes, obesity and high blood pressure. The unhealthy lifestyle factors were inadequate physical activity contributing to 60%-74% and poor dietary habits contributing to 53%-61%. It was also reported, that fewer than 5% of nurses in U.S. engage in 5 healthy lifestyle factors: diet, activity, smoking, alcohol and weight.

Both, eating habits and psychological factors, as investigated in studies mentioned above, were linked in another study by Nursing Standard, which linked comfort eating to stressful experiences. A research in U.S. was conducted questioning 49,000 nurses about trauma and eating habits. It was concluded, that 81% of nurses had experienced at least one traumatic event and 18% had multiple PTSD events. A stress from result of trauma, such as treating severely injured patient was more associated with food addictions. It was found that the earlier the stress symptoms occurred, the higher prevalence of unhealthy food habits occurred. The issue of Nursing Standard further continues to research workplace pressures that might be associated with this problem in a study that is continuing to be carried out in UK (Nursing Standard, 2014).

## 7.2 Nurse nutrition knowledge

A study by Schaller and James (2005) carried out in Australia, measured level of nutritional knowledge in nurses through analyzing 103 questionnaires. The average score on the nutrition knowledge was 28.9 out of 48. The study summarized that older nurses with more experience had better knowledge that those who were younger and less experienced. Also, it was suggested, that improvement in knowledge is required. Same was suggested in another study by Abdollahi and Abtahi (2013). A study in Tehran measured basic and

clinical nutritional knowledge of physicians, nutritionists and nurses. The study calculated perceived knowledge, and correct knowledge, which concluded that perceived knowledge was above 90% while average actual knowledge was 74% in physicians, 84% in nutritionists and 73% in nurses. The study recommended increasing and promoting awareness of nutrition, especially in clinical settings. The last article, also an analysis of questionnaires, measured nurse knowledge and attitude towards nutrition before and after a training programme. A study in Denmark (2011) with a total of 16 nurse participants, concluded that short- term training programme had positive outcomes in comparison to before the programme. Nurses reported to be more aware of nutrition care, however it wasn't enough to achieve full understanding of responsibility in nutrition care and nurses still had difficulty expressing their nutritional knowledge.

## 7.3 Health promotion in nurses

As important it is for nurses to focus on health of their patients, it's also important for them to focus on practicing health-promotional behaviors for themselves, as the study by McElligott and Siemers suggests (2007). The study assessed health- promoting lifestyle behaviors of a selected group of nurses. Results showed areas of weakness, that connectively got the lowest scores were stress management, physical activity and health responsibility. The highest scores were for nutrition, spirituality and interpersonal relationships. The health promotion models used for this study were Walker, Sechrist & Pender's. Another study focused only on physical activity and diet interventions, conducting a 3-month pilot intervention. Torquati and Kolbe-Alexander (2017) used measures such as nurse self-monitoring, goal setting, and social support through applications and Facebook groups to examine the process. After 3 months, the results showed that the 47 nurse participants recorded increased fruit and vegetable intake, however they also reported a decrease in physical activity. In conclusion, it was challenging for the nurses to increase both, healthy diet and physical activity and they could only focus on one at a time.

# 8 DISCUSSION OF FINDINGS

The aim of the research was to explore if unhealthy diet increases sick leave and examine ways to promote healthier diet choices.

The answer to the first research question could not be proven positive to a high level of certainty because there isn't enough evidence. The association of obesity and work related sick leave is not particularly high. Only one study (Berg & Burdorf & Robroek, 2017 ) made connection between obesity associated diseases and sick leave. Overall, there isn't much research done on sickness leave for nurses, however the studies that have examined health care professionals, which also includes nurses, show other leading factors for low work performances and sick leave. Lack of support and encouragement is a big determinative in predicting sick leave. In many workplaces nurses could experience bullying, which causes negative psychological consequences and decreases performance. A survey (Obeidat & Qanir & Turaani, 2018) questioning 269 nurses concluded, that almost half of the nurses perceived to be victims of bullying. In accordance, one of the most common aspects from selected articles was a social factor, which appeared to be the cause influencing unhealthy lifestyle habits but also could be used to unite nurses in promoting healthy workplace environment. A psychosocial aspect was highlighted that leads to conclude main cause for unhealthy lifestyle is mental health issues such as anxiety and stress that is associated with job demands and social interactions. Nursing profession can be pressing as nurses face a lot of responsibilities that sometimes need to be carried out in a short period of time. When work takes a lot of time, the breaks are shorter which in turn contribute to quick and unhealthy diet choices. Long working hours take a lot of energy thus physical activity time decreases. The energy that is put into work, even if required constant movement is not a substitute for regular exercise.

Another area requiring attention is nutritional education, but it can be improved even in short duration of time, as some studies showed. This can prove to be a beneficial act for workplaces which would support education and awareness. A promotion of nutrition education itself should also be required as studies showed very little amount of nurses de-

ciding to participate in voluntary work programmes. If the health educational programmes in workplace show benefits and yet small amount of nurses respond to participation it stands to argue that reason for that might once again be lack of time and nurse burnout. Another reason for nurses having limited nutrition knowledge might root to the college curriculums. A study by Chepulis and Mearns (2015) assessed nutritional knowledge in nursing students, concluding that overall mean scores were low with exception of those who had received some nutritional education before. When nurses show insufficient nutrition knowledge in the field after they have graduated, it might be beneficial to prepare them better in school. Another study (Blake & Malik, 2011) surveying 325 pre-registered nurses concluded, that most of the participants did not engage in healthy eating and physical exercise. Although the knowledge of participants was sufficient, the implementation was not.

Based on the findings on health promotion, it could be concluded that nurses struggle to maintain healthy lifestyle, which is promoted in workplace. The study by Torquati and Kolbe-Alexander (2017), showed ability for nurses to focus on one goal at a time, so the combination of healthy diet and physical activity might be too ambitious for starting a health promotion programme in workplace. Perhaps the health promotion should focus on one change at a time and slowly incorporate the rest of the goals. Previous studies (Evaluation in health promotion, 2001) suggested that workplace should not only promote prevention of disease but also mental well-being. Findings revealed that diseases are not the main causes of absenteeism, but social influences are. Perhaps it should be considered, that mental health and social wellbeing is part of work-wellness promotion.

## 8.1 Findings relating to theoretical framework

Studies conducting workplace health promotion interventions did suggest that promotion in workplace is beneficial, even if it's short term. The McElligott & Siemers (2009) study, showed that after 6-month follow up, nurses still maintained healthier diet. The process of this study involved changing work environment, which is also suggested in Pender's promotion model. Promoting socially encouraging environment can indeed result in habitual maintenance. Although there was no particularly significant final result, such as weight loss, the healthy diet habits continued to be maintained. Pender's (1982) theory consists mainly of person-environment changes, included reasoning that a person is transformed according to the environment. Two of the studies (Nursing standard, 2014 and Josephson, 2008) mentioned social factor as a main reason for absenteeism, which further stresses the point that health promotion in workplace has a greater success if nurses work together in supporting/motivating each other.

# 9 ETHICAL CONSIDERATIONS

According to Arcada ethical guidelines, the integrity, accuracy and permission to obtain material is essential to conducting a thorough research. One of the main misconducts is plagiarism, which can be defined as submitting someone else's quotations and ideas and presenting them as own without giving any acknowledgement (Council of writing program administration, 2013). During the process of research, the author followed all the ethical guidelines listed at Arcada, some of which prohibit: misconduct, dishonesty, fabrication and falsification (Good scientific practice, Arcada). Particular attention was payed to data collection. Data was collected from reliable academic databases and trusted websites. Findings were concluded and written honestly. Finally, the references were cited respectfully to the original authors.

# 10 LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The research had some limitations that prevented the study to reach its full potential. A large amount of studies were conducted outside of Europe, mostly in United States which limits the global perspective on the subject, so the researcher hopes that further studies will be conducted within Europe, particularly in Finland. Being relatively new in the area of research, the author had difficulties finding appropriate and valid studies in a limited time frame to complete the research, which furthermore limited the extent of the study.

Methodology limitations occurred when some articles with excellent relevancy could not be added because of a requested fee. Therefore, the findings were limited to only 9 articles. Three of those were not focused on nurses exclusively, thus the study excluded some parts of those articles.

Much of quantitative research data gathered in the articles was conducted using self-reports of BMI to investigate the extent of obesity and overweight, however the researcher could not use those studies in thesis for the reasons explained in the background section, therefore many articles published in recent years were not included to support statistics. Recommendations for further research measuring the extension of overweight and obesity problem in nurses should be conducted using different method other than BMI exclusively.

The findings indicated some lack of nurse nutritional knowledge, therefore it is recommended that nurses get more education in school regarding this topic. An added course in school curriculum could benefit future nurses on their own health and the health of their future patients. For already working nurses, the workplace could promote and implement more motivational health behaviors.

# 11 CONCLUSION

There is not a clearly established link between unhealthy diet and sick leave for nurses, however there is a link between CVD related illnesses that might lead to sick days. Teamwork and encouraging environment in workplace is most beneficial for nurses, improving their work performances and decreasing a chance of absenteeism. An education to broaden nutrition knowledge could undoubtedly increase the potential of applying it in practice, not only for nurses themselves but for nurses treating their patients too. However, having a better understanding of nutrition doesn't always mean it will be applied in practice. The bridge that connects the two is a process of practice, motivation and work environment.

**REFERENCES**


Ajani & Moez (2011)" Gap between knowledge and practice in nursing", in *Social and behavioral sciences*, v 15, p. 3927-3931

American Psychological Association (2009) "Publication manual of the American Psychological Association (6th ed.)", chapter 1. Washington DC: Author.

Arcada UAS Good scientific practice in studies at Arcada

Blake & Malik (2011)Do as I say, but not as I do: are next generation nurses role models for health, Perspectives in Public health, September, 2011, Vol. 131, p. 231-239

Buetow (2019)"Apophenia, unconscious bias and reflexivity in nursing qualitative research", *in International journal of nursing studies*, v 89, January 2019, p. 8-13

Centers for disease control and prevention (2017) Stroke facts, 2017

Chepulis & Mearns (2015)"Evaluation of the nutrition knowledge of undergraduate nursing students", in *Journal of nursing education*

Clement & Jankowski & Bouchard (2002)"Health behaviors of nursing students: a longitudinal study", in *The journal of nursing education*

Council of writing program administration (2013)" Defining and avoiding plagiarism: the WPA statement on best practices "

D. Thomas (2006) "A general inductive approach for analyzing qualitative evaluation data", in *American journal of evaluation* 27(2) pp.237-246

Evaluation in health promotion (2001) World Health Organization Online: http://www.euro.who.int/__data/assets/pdf_file/0007/108934/E73455.pdf

Gabriel (2013) Inductive and deductive approaches to research

Healthy eating pyramid (2013)Nutrition Australia

Kam (2014) "What your BMI doesn't tell you", WebMD

Kelly & Willis & Sykes (2017) "Do nurses personal health behaviours impact on their health promotion practice? A systematic review", in *International journal of nursing studies*

Malik & Blake & Batt (2011)"How healthy are our nurses? New and registered nurses compared", in *British journal of nursing*

Marying (2000) "Qualitative content analysis" in *Forum: Qualitative social research*, 1(2)

M. Sorensen & L. Holm (2016) " I feel good and I am not overweight" in *Appetite*, v 107 pp. 135-143

Medical dictionary (2003)Online: https://medical-dictionary.thefreediction-ary.com/Nursing+staff

National center for health statistics (2016)Deaths: Leading causes for 2016

Nursing times (2002)Nutrition and nurse education, 98(34) p. 59

O'Donnell (2009)*American journal of health promotion*, "Definition of health promotion 2.0: Embracing passion, Enchanting motivation, Recognizing dynamic balance and creating opportunities"

Obeidat & Qanir & Turaani, 2018 "The relationship between perceived competence and perceived workplace bullying among registered nurses: a cross sectional survey", in International Journal of nursing studies, v 88 pp. 71-78

Pandian & Gall & Kate (2018)"Prevention of stroke: a global perspective", in *The Lancet*, 392(10154), p. 1269-1278

Pender (2016) Nursing theory, Health promotion model

P. Ngulube & E. Mathipa & M. Gumbo (2015) "Theoretical and Conceptual frameworks in the Social and Management sciences"

Proper & Mechelen (2007)"Effectiveness and economic impact of worksite interventions to promote physical activity and healthy diet", in *World health organization*

Raingruber (2013) "Health promotion, and health: What do these definitions have to do with nursing, Health education", in *Jones& Bartlett Learning*

Reed & Prince, (2018) ''Influence of the workplace on physical activity and cardiometabolic health: Results of the multi-centre cross-sectional Champlain nurses' study'', in *International journal of nursing studies,* 81 (49-60)

Roelen & van Hoffen (2017) ''Psychosocial work environment and mental health-related long-term sickness absence among nurses'', in *International archives of occupational and environmental health,* 91(2)

Shridhar & Rajendra (2015) “Modern diet and its impact on human health” in *Journal of nutrition & Food sciences*

Sparks (2013) “The changing contexts of health promotion”, in *Health promotion international*, 28(2)

Sutton & Austin (2015)”Qualitative research: Data collection, Analysis and management”, in *The Canadian journal of hospital pharmacy*, v 68, p. 226-231

Watling & James & Briggs (2012)” Research methods in educational leadership and management”,in *Qualitative data analysis*: chapter 25, pp. 381-390

WebMD (2016)” Health risks linked to obesity”

WHO (2016) “What is health promotion”

Wolf & Colditz (1998) “Current estimates of the economic cost of obesity in United States: Obesity research”, 6(2)

World health organization (2017) “Healthy diet”

World health organization (2017) “Noncommunicable diseases”

World Health Organization (2018) ”Obesity and overweight”

World Health Organization “Cardiovascular disease”

World Health Organization (2018) “Diet”

World Health Organization (2010) “Diabetes”

**Journal articles**

Abdollahi & Houshiarrad & Abtahi (2013) "The nutrition knowledge level of physicians, nurses and nutritionists in some educational hospitals", in *Journal of paramedical sciences*, v 4, ISSN 2008-4978
Online: file:///C:/Users/garsilad/Downloads/4151-13281-3-PB.pdf

Berg &Burdorf & Robroek (2017) "Associations between common diseases and work ability and sick leave among health care workers", in *International archives of occupational and environmental health*, 90(7)
Online: file:///C:/Users/garsilad/Downloads/REPUB_100151-OA.pdf

Bjerrum &Tewes &Pedersen (2012) "Nurses' self-reported knowledge about and attitude to nutrition- before and after a training programme", in *Scandinavian journal of caring sciences*

Josephson & Lindberg (2008) "Employment and sickness absence: the same factors influence the job turnover and long spells of sick leave-a 3 year follow up of Swedish nurses", in *European journal of public health*, v 18, pp 380-385
Online:https://search.proquest.com/docview/194869710/99C501E71CA34AB-FPQ/1?accountid=27294

McElligott & Siemers & Thomas & Kohn (2009) "Health promotion in nurses: is there a healthy nurse in the house", in *Applied nursing research*, 22(3)
Online:https://www.sciencedirect.com/science/article/pii/S089718970700105X

Nursing standard (2014) "Comfort eating in nurses linked to stressful experiences or lifestyle", 29(4)

Priano & Hong & Chen (2018) “Lifestyles and Health-related outcomes of U.S. Hospital nurses: A systematic review”, in *Nursing outlook* , 66(1). Online:https://www.sciencedirect.com/science/article/pii/S0029655417302762?via%3Dihub

Schaller & James (2005) “The nutritional knowledge of Australian nurses”, in *nurse education today*, 25(5)

Schulte & Wagner & Ostry (2007) “Associations between common diseases and work ability and sick leave among health care workers, A literature review”, in *Occupational and environmental health*, 90(7) Online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1805035/

Torquati & Kolbe-Alexander & Pavey (2017) “Changing diet and physical activity in nurses: A pilot study and process evaluation highlighting challenges in workplace health promotion”in
*Journal of nutrition education and behavior*. Online:https://www.sciencedirect.com/science/article/pii/S1499404617310242?via%3Dihub