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Nursing Interventions in Supporting Smoking Cessation and Reducing the Risk of Lung Cancer

Smoking-related comparison between Finland and New Zealand

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Thesis Abstract

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Title of thesis: Nursing Interventions in Supporting Smoking Cessation and Reducing the Risk of Lung Cancer - Smoking-related comparison between Finland and New Zealand.

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The aim of the thesis is to work towards reducing the risk of lung cancer. This is done by: providing factual information on smoking, lung cancer and nurses' role in smoking cessation, producing a literature review on nursing interventions and nurses' characteristics in smoking cessation; as well as writing a comparison between Finland and New Zealand for a critical view on national tobacco control.

For the general data and country comparison information was searched from different databases, current care guidelines, governmental websites and websites of reliable organizations. A systematic literature review was used for the interventions and nurses' characteristics. The analysis method for this was inductive content analysis.

The main point of the general information on smoking, lung cancer and nurses' role in smoking cessation is to highlight the severity of the problems and the importance of tackling it as well as nurses' role in reducing smoking. The most important result of country comparison was seeing how Finland is falling behind in effective tobacco control. The discussion includes few suggestions on how to correct the situation. The conclusion of the literature review showcases how important a nurse's attitude, innovativeness, training and smoking status are for supporting a patient in smoking cessation.

Keywords: Smoking, lung cancer, smoking cessation, nurse, nursing interventions, Finland, New Zealand, prevention

SEINÄJOEN AMMATTIKORKEAKOULU

Opinnäytetyön tiivistelmä

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Opinnäytetyön tavoite on toimia keuhkosyövän riskin vähentymisen puolesta. Tähän päästään käyttämällä kolmea keinoa: välittämällä tosiasiallista tietoa tupakoinnista, keuhkosyövästä ja sairaanhoitajan roolista tupakoinnin lopettamisessa, tuottamalla kirjallisuuskatsaus hoitotyön menetelmiin ja sairaanhoitajan henkilökohtaisten piirteiden merkitykseen tupakoinnin lopettamisessa; ja kirjoittamalla vertailu Suomen ja Uuden-Seelannin välillä kriittisen, kansallisen tupakoinnin kontrolloinnin tarkastelemiseksi.

Yleistietoja ja maavertailua varten tietoa haettiin erilaisista tietokannoista, Käypä hoito –suosituksista, valtiollisilta internetsivuilta ja luotettavien järjestöjen internet-sivuilta. Systemaattista kirjallisuuskatsausta käytettiin hoitotyön menetelmiin ja sairaanhoitajan piirteisiin tupakoinnin lopettamisessa. Induktiivinen sisältöanalyysi oli katsauksen analyysimetodi.

Yleistietojen tärkein tarkoitus on alleviivata tilanteen vakavuutta ja muutoksen tärkeyttä välittämällä informaatiota tupakoinnista, keuhkosyövästä ja sairaanhoitajan roolista tupakoinnin lopettamisessa. Maavertailun tärkeimmäksi lopputulokseksi nousi Suomen jääminen jälkeen vaikuttavan tupakoinnin kontrollin suhteen, ja keskusteluun sisältyykin joitakin ehdotuksia tilanteen korjaamiseksi. Kirjallisuuskatsauksen lopputulemana nähdään kuinka tärkeä hoitajan asenne, innovatiivisuus, koulutus ja tupakoimattomuus ovat tukiessa potilasta tupakoinnin lopettamisessa.

Keywords: Tupakointi, keuhkosyöpä, tupakoinnin lopettaminen, sairaanhoitaja, hoitotyön menetelmät, Suomi, Uusi-Seelanti, ennaltaehkäisy

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Abbreviations

ACC	Accident Compensation Corporation (of New Zealand)
COPD	Chronic Obstructive Pulmonary Disease
CPD	Cigarettes per Day
CT	Computed tomography
CTQ	Courage to Quit
DHB	District health board (in New Zealand)
EUR	Euro
MI	Myocardial infarction
NA	Negative Affect
NGO	Non-governmental organization
NRT	Nicotine replacement therapy
NZD	New Zealand Dollar
RAY	Finland's Slot Machine Association (In Finnish: Raha-automaattiyhdistys)
TFN	Tobacco Free Nurses
THL	The National Institute for Health and Welfare of Finland (In Finnish: Terveyden ja hyvinvoinnin laitos)
USD	United States Dollar
WHO	World Health Organization
WHO FCTC	World Health Organization Framework Convention on Tobacco Control

1 INTRODUCTION

The thesis is aimed at health care professionals to provide information about supporting clients in quitting smoking. The output consists of general topical information, different intervention methods and factors influencing it and a comparison between Finland and New Zealand's smoking customs and cessation efforts.

In Finland every fifth death of an adult is caused by smoking tobacco. Of all the health problems that smoking causes, lung cancer is the most infamous one. A vast majority of all lung cancer cases is caused by smoking. (Tupakka ja sairaudet 2014.) This is a serious issue that can be tackled by preventive methods. Of these methods, smoking cessation promotion and support seem to be the most effective methods. By focusing on prevention this thesis promotes the goal of reducing the risk of lung cancer.

The thesis includes a country comparison, as it provides a critical view at national tobacco control efforts and their successfulness. Finland and New Zealand were chosen for the comparison as they are similar enough to produce a realistic outcome. Both countries also have an ongoing national project towards becoming a smoke-free nation. As a conclusion, New Zealand was found to be ahead of Finland in reducing smoking in many ways. This showed not only in statistics, but also in the efforts from the New Zealand government, regarding tobacco control and how general-public-friendly, community-oriented and practically approachable the national smoke-free campaign is compared to that of Finland.

The nursing interventions and characteristics of a nurse influencing cessation support were done using a systematic literature review. The outcome included nicotine replacement therapies (NRT), Courage to Quit (CTQ) intervention model, quit lines, the impact of motivation of a smoker, and common smoking-related characteristics of a nurse. While the interventions were found to be moderately affective, the biggest impact was discovered to be in the attitude, innovativeness, educational background and the smoking status of a nurse.

2 SMOKING AND LUNG CANCER

As the title of the thesis reveals, the topic lies in tobacco smoking, its relation to lung cancer and cessation. In the following text, these topics are defined and their relation to each other is explained for the reader. As this thesis focuses on nursing-point-of-view, the nurse's role in the smoking cessation process is noticed as well.

2.1 Definition of smoking and smoking as a habit

According to the law, tobacco products are classified as smoked, inhaled, sucked or chewed on, and are either partly or entirely made from tobacco. Products made from tobacco are cigarettes, cigars and snuff. (Tupakkatuotteet ja sähkösavuke 2014.)

According to Tupakka ja sairaudet (2014), tobacco causes annually about 5 000 deaths in Finland. A third of deaths from cancer are caused by smoking and tobacco also shortens lifespan approximately by eight years. Tobacco is a risk factor for various sicknesses, aggravates already diagnosed diseases and can cause harm to the whole body.

Even in passive smoking, where a person him- or herself does not smoke but is in the presence of smokers and tobacco smoke regularly, there is a high risk of getting cancers and cardiovascular diseases. The risk is in correlation with the amount of time the person is in the presence of cigarette smoke. Even from an exhalation, the smoke contains substances that are labelled carcinogenic, therefore also putting the people exposed to the tobacco smoke at risk. Passive smoking causes similar risks compared to a smoker, such as changes in respiratory organs, inflammations, and weakening of the immune system and cilia action of the lungs' epithelium. With children, it increases the chance of respiratory inflammations, ear infections and causes the outbreak of asthma and its negative progression. (Tupakoinnin tärkemmät tunnetut terveyshaitat 2014.)

The effects of smoking on one's health are multiple. Quitting smoking decreases the risk of various diseases, such as chronic obstructive pulmonary disorder (COPD), peripheral vascular disease, stroke and several cancers (particularly lung cancer). Coughing, wheezing, and shortness of breath reduce improving the quality of life. Another important aspect in smoking cessation is cost savings. By quitting smoking, the amount of money one saves from cigarettes, doctor visits, drugs, and health insurance penalties are significant. Tobacco smoking is the most preventable cause of death, and dying prematurely is more common in smokers. Many smokers think that the damage is already done, and it's too late to quit smoking, but it is studied that there are various benefits from quitting. Already after 20 minutes of not smoking the blood pressure and peripheral circulation normalize. In 12 hours, the carbon monoxide levels in the body drop diminishing the risk of myocardial infarction (MI) in one day. (Porter 2013, 264.)

Smoking causes physical, social and psychological dependences. This is also known as an addiction, which is classified as a disease. Physical dependence to nicotine is the main factor, with behaviour and smoking habits related to smoking addiction. The strength of the nicotine dependency can be measured using standardized Fagerström test. (Tupakkariippuvuus ja tupakasta vieroitus 2012.)

Nicotine in smoking is inhaled and takes only about ten seconds to reach the brain, causing a release of dopamine and norepinephrine. These hormones create feelings of euphoria thus causing cravings for nicotine. Tachycardia, nausea, headache, anxiety, tremors, irritability and diarrhoea are most common withdrawal symptoms of nicotine. Nicotine is even more addictive when smoking is mixed with positive feelings and actions. (Porter 2013, 264.) Nicotine dependency can be seen as a change in the action of central nervous system's nicotine receptors due to the consumption of nicotine. This change causes withdrawal symptoms. Nicotine addiction is compared to other narcotic substance addictions and fills the chemical dependence criteria. (Tupakkariippuvuus ja tupakasta vieroitus 2012, 5.)

In an evidence-based guide to smoking cessation therapies by Dogar and Siddiqi (2013, 544), experts have shown a distinct criteria for confirming that a smoker has quit: "A `self-reported 4-week quitter` is a treated smoker assessed [...] 4 weeks after the assigned quit date who declares that s/he has not smoked even a

single puff of a cigarette in the past 2 weeks". "A 'carbon-monoxide (CO) verified 4-week quitter' is a self-reported 4-week quitted and his/her expired-air CO is assessed 4 weeks after the assigned quit date and found to be less than 10 ppm". "A '52-week quitter' is a treated smoker assessed...52 weeks after the designated quit date and declares that s/he has not smoked more than 5 cigarettes in the past 50 weeks." This is referred to as the Russell standard" to declare the cessation. (West, Hajek, Stead, & Stapleton 2005.)

2.2 Lung cancer

Lung cancer is the fourth most common cancer worldwide, causing most cancer deaths. In Finland it is the second most common type of cancer in men and fourth in women. Lung cancer diagnosis has decreased in men since 1970 because of the decline in smoking. However, lung cancer is the second most common cancer coming second to prostate cancer. (Mustajoki 2014.) According to Knuuttila (2015), in Finland about 2 572 new lung cancers were diagnosed in 2013, of which 884 were women. In women, lung cancer has increased because smoking has become more common than in the past. Of all lung cancers about 85-90% originate from smoking. There are about 60 different ingredients in cigarettes that may cause cancer, and a smoker has 15-30 times larger chance to get cancer than a non-smoker. Being near tobacco smoke on a regular basis puts one in 2-3 times more in risk to get lung cancer. (Mustajoki 2014.)

At first, lung cancer can be symptomless and can grow large before any noticeable symptoms appear. Symptoms of lung cancer appear quite late in the disease and are often unnoticeable. Prolonged coughing is a common symptom in lung cancer, and it is also a common occurrence when smoking in which coughing occurs to remove excess sputum. With lung cancer the characteristics of coughing may change. If the coughing causes blood to rise with the sputum, it may be a sign of lung cancer. Other symptoms that can indicate cancer are pain in the chest area, shortness of breath, losing weight and the lack of appetite. (Mustajoki 2014.)

The diagnosis of lung cancer is made based on a thorax radiography. If a cancer is suspected, further examinations are needed. Afterwards, the exact place and

spread of cancer can be seen in a whole body computed tomography (CT) scan, but the most accurate diagnosis can be made with a microscopic examination from a sample biopsy of the tumour. With the microscopic screening the type of cancer can be classified and the most accurate and effective treatment can be planned. (Mustajoki 2014.) About 25% of the cancers are small cell carcinomas and 75% non-small cell carcinomas, adenocarcinoma being the most common of them (Knuuttila 2015).

2.3 Smoking as a risk for lung cancer

Almost 90% of deaths from lung cancer are caused by smoking and it is well-established that smoking is the most prominent risk factor for the cancer. Evidently, continuing smoking while already diagnosed with lung cancer makes morbidity levels even higher while going through the cancer treatment, thus reducing overall survival chances. (Dean, Finnell, Scibner, Wang, Steinerbrenner & Gooneratne 2010, 132.)

Chemical compounds from tobacco create changes in genes that contain molecules connected to proliferation, invasion, and metastasis and deterioration of immunity in the progression of cancer cells. Smoking is implied to advance the progression of the malignant growth. (Dean et al. 2010, 132.)

According to Dean et al. (2010, 132), after a lung cancer diagnosis, half of the participants in the study continued smoking. Before the study, the estimated amount was only 14-20%. Even though the link between lung cancer and smoking is known by both patients and health care workers, the article highlighted the role of nurses and further education about the consequences of smoking, especially during the treatment for lung cancer. Health care professionals may often assume that patients themselves know best when to talk about the issue of smoking. The assumption that cancer patients do not want to quit smoking should not be considered. Lung cancer patients are at a high risk of getting secondary tumours that can be prevented by reducing or stopping smoking.

2.4 Nurses' role in smoking cessation

According to Tupakoinnin lopettaminen (2014) in Terveysportti, six in every ten smokers would like to quit smoking, and it usually takes up to 3-4 tries before success. Firstly it is important to ask and evaluate the want to quit smoking. It is important to have a motivational discussion about smoking cessation, but already a suggestion to quit smoking has an immediate effect. An encouraging talk alone can strengthen the readiness and willingness for a lifestyle change. 'Prochask and DiClement' model is used to describe the readiness for a lifestyle change. The phases of the model are indifference, consideration, decision making, cessation, and maintenance stages. The last one describes permanent non-smoking status. Interventions are chosen and detailed according to the stage. (Tupakoinnin lopettaminen 2014.) The model has been criticised as smoking cessation interventions should be offered to all smokers regardless of their stage of model (Tupakkariippuvuus ja tupakasta vieroitus 2012).

According to Butler, Rayens, Zhang and Hahn (2011, 45-49) the motivation for smoking cessation is positively related to the progress of the change and risk of lung cancer. Quitting smoking is not dependent on the person's age, sex, economy, status or the amount of cigarettes smoked in a day. The motivation to stop smoking is not different compared between people who smoked tobacco and who consumed tobacco products in multiple forms.

The nurses' role has been highlighted because of its effectiveness in using interventions for treating tobacco dependence; nurses offer support by informing and providing advice about various interventions with pharmacotherapy and follow-up (Wong & Stokes 2011). Nurses' role has been effective as nurses work in co-operation with cancer patients and their significant others in various health care settings. Nurses have several good and cost-effective interventions to help people to stop smoking, but even short encounters with health care professionals have a positive effect in assisting smokers to stop smoking. (Butler et al. 2011, 48). The interventions include a 'Four A's' process as presented in the publication by Butler et al. (2011, 48): "Ask about tobacco use, Advice tobacco users to quit, Assess willingness to make a quit attempt, and Arrange follow-up (Fiore & Jaen 2008)".

3 SMOKING IN FINLAND AND NEW ZEALAND

A comparison between countries helps to highlight differences and similarities in practices and policies. When comparing Finland and New Zealand by looking at smoking habits, smoking cessation and national goals in smoking reduction, it is possible to start a discussion of each nation's practices and policies' functionality and effectiveness. This type of discussion, based on comparison, provides a chance for further investigation for development of practices and policies.

Finland in Northern Europe and New Zealand in Oceania both have national projects aiming at a smoke-free status (Savuton Suomi 2040, [Ref. 4 January 2015]; Smokefree 2025, [Ref. 4 January 2015]). As both countries have a relatively similar population size, both are western cultures, have complex yet comprehensive health care systems, and nationally battle to reduce smoking (New Zealand health system 2013; Terveydenhuolto Suomessa 2013), they are suitable for one-to-one comparison.

While located at the opposite ends of the world, the population on sizes of Finland and New Zealand were only different by 941 267 habitants in 2012 (Finland 2013; New Zealand 2013). Both countries are also among the so-called western world which means that their cultures and concepts of public healthcare are similar.

According to the WHO, both Finland (2013) and New Zealand (2013) signed the WHO Framework Convention on Tobacco Control (WHO FCTC) status on 16 June, 2003. The date of ratification was 27 January, 2004, in New Zealand and a year later, 24 January, 2005, in Finland.

3.1 Basic information of Finland

Finland is a country in Northern Europe bordering Russia in the east, Sweden in the west and Norway in the north. It has belonged to the European Union since 1995 and has used the monetary unit of Euro since 1999. Finland's official languages are Finnish and Swedish. The population of Finland was 5 401 267 in

2012. The World Health Organization classifies Finland to be in the income group ‘high’. (Finland 2013.)

The Finnish health care system is a publically funded system focused on preventive methods and aiming to be universally accessible to all Finns and those permanently residing in Finland. Furthermore, the quality of care should be equal for everyone. The public-sector health care service providers in Finland are municipal health centres and hospital districts. On top of these there are also private-sector health care services in the form of private health care providers, private occupation healthcare clinics and non-governmental organizations (NGOs). In Finland, municipalities are responsible for providing local health care services according to the governmental regulations. (Health Care in Finland 2013.)

3.1.1 Smoking in Finland

According to the WHO’s Report on the Global Tobacco Epidemic (Finland 2013) the daily tobacco use among adolescents aged 14 was 4% for male and 6% for female in 2012. In the same year, the daily tobacco smoking among adults aged 15-64 was 21.9% for male and 14,8% for female. Therefore, 17.8% of all 15-64-year-old adults were smoking tobacco daily. In the year 2011, it was estimated that 20% of male and 14% of female adults were smoking tobacco daily. This meant that 17% of all over 15-year-olds were smoking tobacco daily.

When it comes to the costs of smoking for an individual smoker, the 2012 price of most sold brand’s pack of 20 cigarettes was 4.90 euro (EUR). The retail sales price of the lowest-cost brand of cigarettes (a pack for 20 cigarettes) was 4.20 EUR and the price of a same-size package of Marlboro or similar brand was 5.40 EUR. The total taxes of the most sold brand pack of 20 cigarettes in 2012 were 79.9%. The total excise of the annual tax revenues from tobacco products in Finland in 2011 were 732,550 million EUR. (Finland 2013.)

3.1.2 Finnish national efforts for smoking cessation

As presented in Finland (2013), in Finland there are specified national objectives for tobacco control as well as a national department for implementation. The government expenditure on tobacco control was 2 256 000 EUR in 2012 (Joossens & Raw 2014, 19).

The WHO Report on the Global Tobacco Epidemic (Finland 2013) showed the country profile of Finland as of the 31 December 2012 to have one public place with smoke-free legislation; in educational facilities except universities. Within this legislation, there was a requirement by national laws to fine establishments and the smokers. Also, citizen complaints of smoking were registered and investigations arranged.

Nicotine replacement therapy (NRT) in its different forms is legally sold in Finland in general stores without a prescription. Also bupropion and varenicline are legally sold, but can be only purchased from a pharmacy with a prescription. Smoking cessation support is available in most health clinics and other primary care facilities and hospitals. The national health insurance covers the smoking cessation support partially. (Finland 2013.)

According to Finland (2013) there are several laws in place about health warnings on tobacco packages. For example, a total of 39% of the cigarette package surface is legally required to be covered by health warnings in Finland. Of the front of the package 32% must be covered and 45% of the rear of the package. There are 16 specific health warnings approved by the law that are used on the packages. A law prohibits potentially misleading words such as “low tar”, “light”, or “mild” being presented in the packaging or labelling. However, it is not mandatory for the Finnish quit line number to appear on the packaging or labelling.

In 2011-2012 there was at least one national anti-tobacco mass media campaign in Finland. The evidence-based planning of the campaign did include a research about the target audience, but the campaign was not pre-tested with the target audience and this campaign was not a part of a larger anti-tobacco programme. Also, the campaign was not aired on TV or radio and public relations were not

used, but it did use media planning. In the evaluation phase the process and the outcome were evaluated. (Finland 2013.)

3.1.3 Savuton Suomi 2040 –project

Savuton Suomi 2040 is a Finnish collaboration project aiming at a smoke-free status. It started in 2006 and was named Savuton Suomi 2030/2040, but 2030 got dropped out. The project has listed four steps on its website in order to get to their goal: 1) promoting the population's positive attitude towards being smoke-free, 2) preventing the youth from starting smoking, 3) supporting the cessation on the use of tobacco products, and 4) strengthen the execution of the tobacco law. There is no mention of the exact maximum percentage of population that smokes, in order for a nation to be called "smoke-free". (Savuton Suomi 2040, [Ref: 10 January 2015].)

As found in the web pages of Savuton Suomi 2040 ([Ref: 10 January 2015]) the project is funded mainly by the Raha-automaattiyhdistys (RAY). There are seventeen members to the collaboration: The Finnish Institute of Occupational Health, The Organisation for Respiratory Health in Finland, Filha – Finnish Lung Health Association, HUCH Heart and Lung Center, The Finnish Respiratory Society, The Cancer Society of Finland, National Institute for Health and Welfare, SOSTE – Finnish Society for Social and Health, Finland's ASH – Action on Smoking and Health, DAT – Doctors Against Tobacco, Finnish Heart Association, The Association of Health Promoting Hospitals in Finland, EHYT – Finnish Association for Substance Abuse Prevention, The Evangelical Lutheran Church of Finland, Allergy and Asthma Federation, Tobacco-Free Municipality, The Finnish Medical Society Duodecim. There are also other affiliates involved.

The Savuton Suomi 2040 –website ([Ref: 10 January 2015]) is offered in three languages: Finnish, English and Swedish. Out of these, only the Finnish version was available in autumn 2014. The English language version became available in spring 2015, but at the time of finalizing this thesis the Swedish language version was not yet available. The amount of information available other than in Finnish is limited. The project runs a competition for the best smoke-free workplace and

provides several smoking-related seminars for health care professionals. It offers knowledge on smoking and smoking cessation by linking websites of different organisations to its web page. There are also several publications which are mainly research studies, statistics, laws and project programmes. The project website is not aimed at the general public or individuals thinking about smoking cessation.

3.2 Basic information of New Zealand

New Zealand is an island nation surrounded by the South Pacific Ocean and Tasmanian Sea in Oceania. New Zealand has been a member of the Commonwealth since 1931. Its monetary unit is the New Zealand dollar. New Zealand's official languages are English and Maori. The population of New Zealand was 4 460 000 in 2012. New Zealand belongs to the income group of 'high' according to the WHO. (New Zealand 2013.)

According to New Zealand health system (2013) the health care system of the nation is described as a "complex network of organizations and people". The public-sector health care service providers in New Zealand are the district health boards (DHBs), which cover services from primary care to specialized care. Private-sector health care service providers are NGOs and other private entrepreneurs. Out of publically funded services, all healthcare relating to accidents is provided by the Accident Compensation Corporation (ACC), which is a separate entity.

3.2.1 Smoking in New Zealand

The New Zealand country profile of WHO Report on the Global Tobacco Epidemic (New Zealand 2013) reveals that the prevalence of daily tobacco smoked among youth aged 14-15 years old was 3.7% for male and 4.6% for female in 2012. Out of adults, 15-year-olds and over, 17.2% of male and 15.8% of female were smoking tobacco daily. In 2012, 16.5% of over 15-year-olds were smoking tobacco

daily. In the year 2011, the estimated adult prevalence of daily tobacco smoking was 18% for male and 17% for female, the total being 18%.

In 2012, the costs of cigarettes for an individual consumer were 14.40 New Zealand dollars (NZD) of a pack of 20 cigarettes of most sold brand in New Zealand. The price of the lowest-cost brand 20 cigarette-package was 13.60 NZD and the price of Marlboro or similar brand of cigarettes of the same size as previous packages was 15.90 NZD. The total taxes of a package of the most sold brand were 74.4%. The total excise of the annual tax revenues from tobacco products in New Zealand in 2012 were 1,237 billion NZD. (New Zealand 2013.)

3.2.2 New Zealand national efforts for smoking cessation

As presented in New Zealand (2013), there have been set specific national objectives in tobacco control and a national department for implementation in New Zealand. The government expenditure on tobacco control was 62 000 000 NZD in the most recent year available.

In the WHO Report on the Global Tobacco Epidemic (New Zealand 2013) New Zealand is reported to have eight public places with smoke-free legislation: health-care facilities, educational facilities including universities, government facilities, indoor offices, restaurants, cafes, pubs and bars and public transport. There were also laws in place to require fines for smoking for the establishment, but not for the smoker. Citizen complaints were registered and investigations arranged.

NRT is legally sold in its different forms in New Zealand in general stores without a prescription. Its cost is fully covered by the national health insurance and it is listed on the country's list of essential drugs. Bupropion and varenicline are also available in a pharmacy with a prescription. Their costs, too, are fully covered by the national health insurance. Smoking cessation support is offered in most health clinics and other primary care facilities, hospitals, offices of health professionals and communities. The national health insurance covers the smoking cessation support fully in hospitals and partially in the rest. (New Zealand 2013.)

Health warnings are required to appear on tobacco packages by law in New Zealand. A total 60% of cigarette package must be covered by warnings, of which 30% of the front of the package has to be covered and 90% of the rear of the package. There are 14 specific health warnings approved by the law that are used on the packages. The law does not prohibit cigarette packages or labels of including words such as “low tar”, “light”, or “mild” that might mislead the consumer. On the other hand, the New Zealand’s quit line number is mandatory to appear on the packaging. (New Zealand 2013.)

In New Zealand (2013), it is presented that between the years 2011-2012 there was at least one mass media campaign against tobacco. The campaign was planned based on evidence as it was a part of a larger tobacco control programme, it was pre-tested with the target audience and the target audience was researched. The implementation of the campaign included it being aired on TV and/or radio by using media planning for secured air-time and/or placement, and it was assisted by public relations. Process evaluation was in place during the campaign and the effectiveness of the campaign was evaluated.

3.2.3 Smokefree 2025 –project

Smokefree 2025 is a New Zealand anti-smoking project started in 2011. The project is explained by three points: 1) for our children and grandchildren to be free from tobacco use and tobacco exposure, 2) to smoking prevalence in New Zealand population to be less than 5%, and 3) tobacco to be difficult to sell and supply. (Smokefree 2025, [Ref: 4 January 2015].)

According to the Smokefree 2025 ([Ref: 4 January 2015]) website, the project begun with the New Zealand government’s decision and is run by the Health Promotion Agency (HPA), which is a public health promoting department. Other funding also comes from merchandising, through which individual people can support the Smokefree project.

The Smokefree 2025 –website ([Ref: 4 January 2015]) offers information and material about smoking, becoming smoke-free, ways for people to support others

in smoking cessation and getting involved in the community, as well as about different anti-tobacco campaigns. Smokefree 2025 organises events such as charity runs to support smoking cessation and workshops and conferences for health care professionals. On the website there is also a link to a website called Auahi Kore, which is a part of Smokefree 2025 directly aimed at New Zealand's indigenous Maori people. The message is edited to suit the Maori's cultural peculiarities and language. The Smokefree 2025 website offers a diversity of anti-smoking material, information and tools, for both the public and health care workers.

4 SMOKING CESSATION INTERVENTIONS, MOTIVATION & NURSE-RELATED FACTORS AFFECTING THE OUTCOME

In the following text, the main smoking cessation interventions, motivation of clients to quit smoking, and the characteristic of nurses that affect the support for cessation are presented. The research articles focus on information applicable to nursing practice.

4.1 Smoking cessation interventions

Smoking cessation interventions are tools that nurses amongst other healthcare workers can use to support a person willing to quit smoking. These tools often overlap each other being used simultaneously to reach the desired effect.

4.1.1 Nicotine replacement therapy

NRT is generally used for easing the 8-12 week period after quitting smoking. The NRT was used in a study by Bullen et al. (2010) to determine its usefulness in pre-cessation. Nicotine treatment was carried out in the form of patches and/or gum. The study focused on pre-cessation for two weeks with the help of nicotine products. Pre-cessation meant using nicotine products before the actual quitting. Even though there were no significant statistical differences, however, the pre-cessation participants experienced less urges to smoke compared to those who did not take part in pre-cessation.

Another aspect of the affectivity of NRT is described in the research article by Walker et al. (2011). The focus of the article is on the effects of accessibility and freedom of choice of NRT for smokers. In the conclusion, a short-term benefit of free choice and accessibility are noted.

4.1.2 The Courage to Quit (CTQ) intervention model

Asvat, Cao, Africk, Matthews and King (2014) introduce in their article the Courage to Quit (CTQ) as a community-oriented intervention method. The CTQ is an evidence-based psycho educational approach to support and guide smoking cessation attempt. CTQ sessions were either short (3 meetings) or long (6 meetings). Participants had overall quit rates of 17% in short and 19% in long sessions in short term. Race had no significant effect on the outcome.

4.1.3 Telephone quit line practices

Telephone quit lines are often free services offering support for smoking cessation. An article (2014) by Saul, Bonito, Provan, Ruppel and Leischow describes the quit lines as effective, but there has been discussion that the techniques used by quit lines vary widely. Some quit lines used different practices in proactive counselling, where the smokers are called directly rather than waiting for them to call. Quit lines using high-in-evidence implementation have better success rates than those who do not.

About 22.6% of non-pregnant women who had previously contacted quit line reported themselves as non-smokers seven months after the service. This was even though only 43% of the women received counselling together with self-help material. Quit lines offer necessary addition to smoking cessation interventions. (Bombard, Farr, Dietz, Tong, Zhang & Rabius 2012.)

4.2 Motivation to quit smoking

There is a strong decision to quit smoking if a relative has been diagnosed with lung cancer according to Butler et al. (2010). The relationship has a positive motivation, causing relatives to want to quit. Counselling and discussion either among family members or with a health professional were considered appropriate. Age, sex, ethnic background, level of education, employment situation, economical situation, or even the amount of smoked cigarettes per day are not in relation to

the person's motivation. The motivation to quit smoking is associated with the will to talk about cessation, personal experience of the risk of lung cancer and the stage and severity of the situation. People with higher motivation to quit have more knowledge of smoking as a risk factor for lung cancer.

4.3 Characteristics of a nurse that affect smoking cessation

According to Porter (2013) nurses have the possibility to address clients' willingness to quit smoking in primary and outpatient care. Tobacco health information by a nurse to a client increases the amount of cessation attempts a client makes. Therefore, nurses play a remarkable role in supporting smoking cessation and reducing the costs of health care.

4.3.1 Education and knowledge of a nurse

Smoking cessation itself is quite hard because of its addictiveness, thus nurses try to support smokers with knowledge of health education. The nurse's role is highlighted in the support of smoking cessation by helping them and giving advice. Preparing the undergraduate nurse to be able to guide the smoker to stop smoking is essential. (Wong & Stokes 2011.)

Wong and Stokes (2011) gave an explanation of the recommended "ABC approach" as a replacement of the "Five A's approach". NRT, discussions person to person, motivational questioning as well as support via phone were also viewed as effective interventions in the research. Even acupuncture and hypnosis were tested as a treatment in the help of smoking cessation.

The aim of the research article by Sarna et al. (2014) is to assess the nurses' education on how to help quit smoking with the aid of nursing interventions. The most common method the nurses used and recorded was the use of quit line services. The educational program resulted in more nurses to use and offer interventions for clients to support their smoking cessation. However, education program for nurses are more efficient with nurses who were not smokers.

Education is important for health care professionals in order to carry out tobacco control.

4.3.2 Attitude and innovation of a nurse

Nurse's innovations are important in the case of health care and in relation to helping smokers to quit smoking. The possible opportunity to help people in cessation in various methods is essential. The guidelines for nurses in supporting quitting smoking are to assess the habits, provide advice, stress health promotion and education to the clients. It has been criticized that the nurses have not been able to give adequate support in smoking cessation in the past because of the lack of knowledge, skills and confidence. Providing health information on smoking for clients is highlighted as an opportunity for nurses alongside their work, to provide information using good language and communication skills, as well as the necessary knowledge and skills to provide help. (Whyte, Watson & McIntosh 2006.)

The frequency of smoking cessation interventions is described according to Sarna, Bialous, Wells, Kotlerman, Wewers and Froelicher (2009) to determine the relation between interventions and nurses awareness of them. The lack of education and resources could result in decreased level of interventions by nurses.

The importance of nurses' attitudes towards the intention is to support smokers in quitting, by various old and new nursing interventions. It has been noted that nurses need the support of the client to carry out the implementations. Nurses must have the attitude to be able to help the client in quitting smoking, and to be able to be innovative in the ways of smoking interventions. When the whole health care personnel share the same goal of promoting smoking cessation, the nurses' performance is enhanced. (Smit, de Vries & Hoving 2013.)

4.3.3 Smoking status of a nurse

The challenge that has been mentioned in two of the articles by Sarna et al. (2014) and Sarna et al. (2009) is that the smoking status of the nurses challenges the nurses' ability to promote smoking cessation. The smoking status in health care personnel is usually not thought about. According to the study by Sarna et al. (2014) educational programs about smoking cessation interventions could also concentrate on status of smoking of health care workers.

5 THE GOALS AND PURPOSE OF THE THESIS

The goals of the thesis are to 1) summarize information about smoking, lung cancer, and smoking as a risk factor to lung cancer, as well as to provide a summary in an easy-to-understand form for health care workers such as registered nurses; 2) use two countries, New Zealand and Finland, to point out differences in national smoking-related statistics, cessation efforts, and smoke-free nation –projects; 3) to list smoking cessation interventions used by nurses and their effectiveness according to reliable research articles; and 4) as a literature review identifying if further research is needed and if so, on which areas. The fifth goal may be used to identify a further question of the effectiveness of each nation's way of approach.

The purpose is to gain information on each field from different sources and to process it. Information of the means and interventions for nurses in the process of smoking cessation explains different types of interventions, cessation motivation and characteristics of a nurse affecting the topic in a form of literature review. The data of each country is compared and similarities and differences are highlighted.

The questions that are set to clarify the purpose are:

1. What kind of different interventions and means do nurses have in helping clients quit smoking?
2. How do the smoking cessation methods between New Zealand and Finland differ or are similar, and do some seem to be more effective than others?
3. How do characteristics of nurses affect on smoking cessation of patients?
4. How different or similar approaches to reduce smoking on a national level do Finland and New Zealand have?
5. Is more research material in the field of interventions for smoking cessation for nurses needed?

6 DATA COLLECTION METHODS OF THE THESIS

The methods and sources of data collection for the thesis were decided separately for the requirements of each part of the thesis. For the theoretical framework evidence-based, general information of the topic was searched to cover the basic knowledge for understanding the topic. For the literature review scientific, original research articles were obtained to cover the needs of that type of method and to produce a trustworthy result. For the country comparison, the goal was to use as similar, trustworthy sources of information as possible for a reliable comparison.

6.1 Literature review

In this thesis a systematic literature review was the chosen method to produce an understanding of the current situation of scientific nursing researches concerning nursing intervention in smoking cessation and the effects of nurses' characteristics on it. The plan was to collect research articles and to process those articles into a summary. A systematic literature review consists of four main phases: deciding on the topic, collecting literature, analysing and synthesizing that literature, and finally writing the review (Cronin, Ryan & Coughlan 2008, 39-41). As mentioned by Cronin, Ryan and Couglan (2008), a systematic literature review includes also creating the research questions, deciding on the criteria for exclusion or inclusion, choosing and accessing literature, evaluating the level of the quality of literature, and to "analyse, synthesize and disseminate the findings".

6.2 Search of the knowledge

Scientific nursing, medical and governmental databases were used to find information and material for different areas of the thesis. These databases covered the information for the theoretical framework, literature review and country information. For the theoretical framework and country information, other reliable sources were used concurrently. Käypä hoito –recommendations (current care guidelines) were used as one source to find knowledge for the theoretical

framework. Some information for this area of the thesis came from the website of the National Institute of Health and Welfare of Finland (THL).

To find research articles, Ebscohost/CINAHL full text was being used with keywords: “smoking”, “smoking cessation”, and “interventions”. “Finland” or “New Zealand” was added to each of the previous keywords to find country information. The key words “smoking cessation” with subheadings “drug effects”, “education”, “prevention and control”, and “trends” was used for CINAHL headings. To find basic information, the key words “tobacco use” and “lung cancer” were used in CINAHL. The database used was chosen because of its accessibility and valid content.

As presented in the figure 1, the data collection process was undergone step by step. At all phases, the results were recorded and assessed. This proved useful considering later documentation of the process. The data presented in the figure 1 was used for the systematic literature review. The search words mentioned in the second box include all the words mentioned above. At the last stage when picking articles that were suitable for the thesis the authors chose 11 articles that’s contents were not limited to very small groups of people – either numerically or otherwise (e.g. prisoners, army officers, etc.).

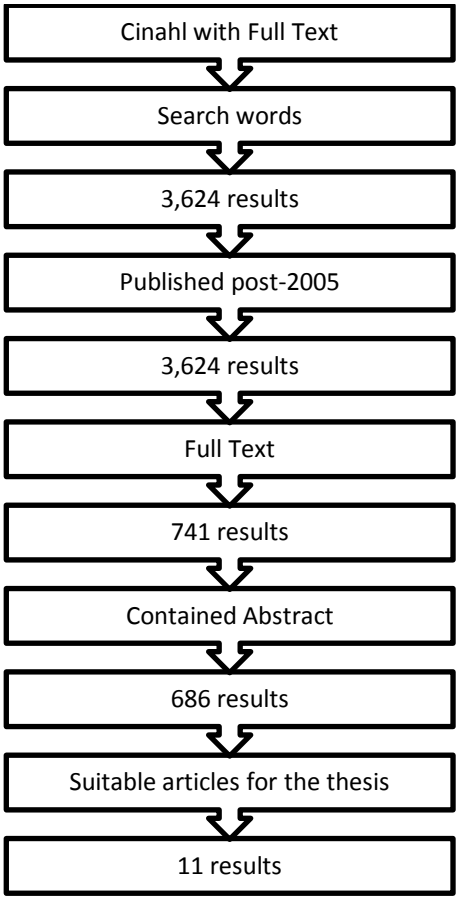

Figure 1 Data collection process.

6.3 The inclusion and exclusion criteria

After the research articles were collected, they were evaluated according to their usability. Inclusion and exclusion criteria, shown in table 1, were created and used as a tool for the decision making. The articles were research articles with the abstract available and they were with full text. The articles included were published in between the years 2005 and 2015. The only main topic was smoking cessation, especially interventions, and that the article was applicable for the general public without subgroups such as ethnicity or disease (except for lung cancer). The point of view in the articles was reducing the risk of lung cancer, which excluded other cardiopulmonary diseases, and supporting and promoting smoking cessation in nursing. The language used in the research articles was English. With the exclusion and inclusion criteria, 11 research articles were found, and the inductive content analysis was formed from those articles.

Table 1 Inclusion and exclusion criteria for the literature review.

Inclusion	Exclusion
Research article	Non-research article
Language: English	Language: other than English
Published post-2005	Published pre-2005
Focus on cessation interventions OR the nurses' role in cessation	Focus on other than cessation interventions OR other than nurses' role in cessation
Interventions applicable to general population	Interventions non-applicable to general population
Applicable to nursing	Non-applicable to nursing
Applicable to lung cancer-point-of-view	Non-applicable to lung cancer-point-of-view

6.4 Data collection for information of Finland and New Zealand

Country information was sourced from the following websites: the WHO country profiles, statistics, and tobacco surveillance information of New Zealand and Finland. These were used to find general information and information related to smoking. Some appropriate country information was gathered from country web pages provided by European Union and Commonwealth. For New Zealand, the ministry of health provided national guidelines and other information about smoking cessation. Similar information for Finland was provided in Käypä hoito – recommendations. Information was searched about each country's goal towards a smoke-free nation: New Zealand Smokefree 2025 and Finland Savuton Suomi 2030/2040. Each of the projects has their own websites which were used as the only source of information for the particular topic.

In total there were 13 sources used for the country comparison information. Of these eight sources were of Finland and five of New Zealand. When it came to the health care system of each country, three sources were need to gather a sufficient amount of information of Finland, while one was enough for New Zealand.

The principal when collecting information of each country was to find sources which were similar enough to enable a comprehensive comparison and which at

the same time were valid and reliable. This worked out well especially with the information provided by WHO and each country's smoke-free projects' web pages. To standardise the monetary values in order to be able to make comparisons, XE.com was used for the exchange rates. The exchange rates of the conversion dates are presented in the thesis.

7 INDUCTIVE CONTENT ANALYSIS AS THE DATA ANALYSIS METHOD

The data analysis method for the nursing interventions for smoking cessation and characteristics of a nurse was an inductive content analysis. According to Elo and Kyngäs (2007, 109-111), an inductive content analysis usually consists of three main phases: “preparation, organizing and reporting”. A coding system, for example a keyword or a sentence, is decided upon, and the material is read through several times while making markings. Based on the coding system, the markings are then organized and categories for them are created. Each piece of material is put into a category and each group is given a heading. Based on this abstraction, aka “a general description of the research topic”, is written.

Figure 2 gives an example of coding and the abstraction process used in the thesis. While reading through material words and terms, such as NRT, smoking cessation and pre-cessation, were either written in the margins of the paper or underlined. After coding the material papers containing these, words or terms were gathered as a further sub-category. This category was given a heading ‘Nicotine replacement therapy’ (NRT), which was chosen to belong to the generic category of ‘Interventions’. This belonged to the main category ‘Smoking cessation’.

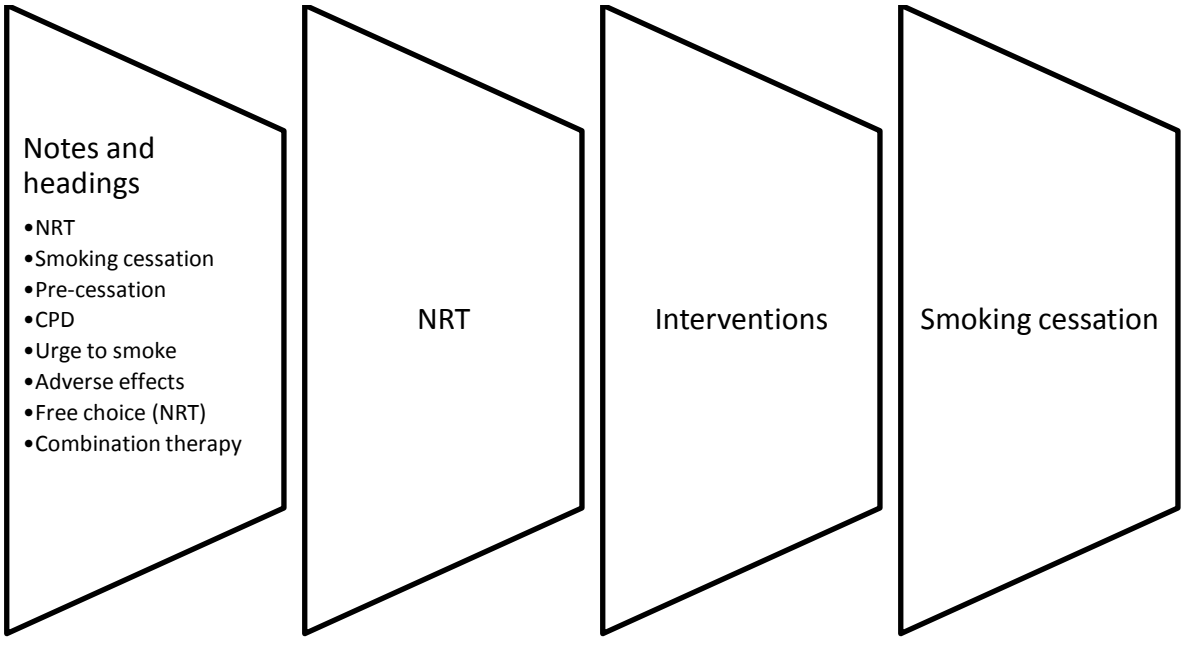

Figure 2 Process of grouping data

The process shown in figure 2 can be located in figure 3, where the categorization of all the material used for the literature review is presented. The material under the main category was listed in three generic categories ‘Motivation’, ‘Interventions’, and ‘Characteristics of a nurse’.

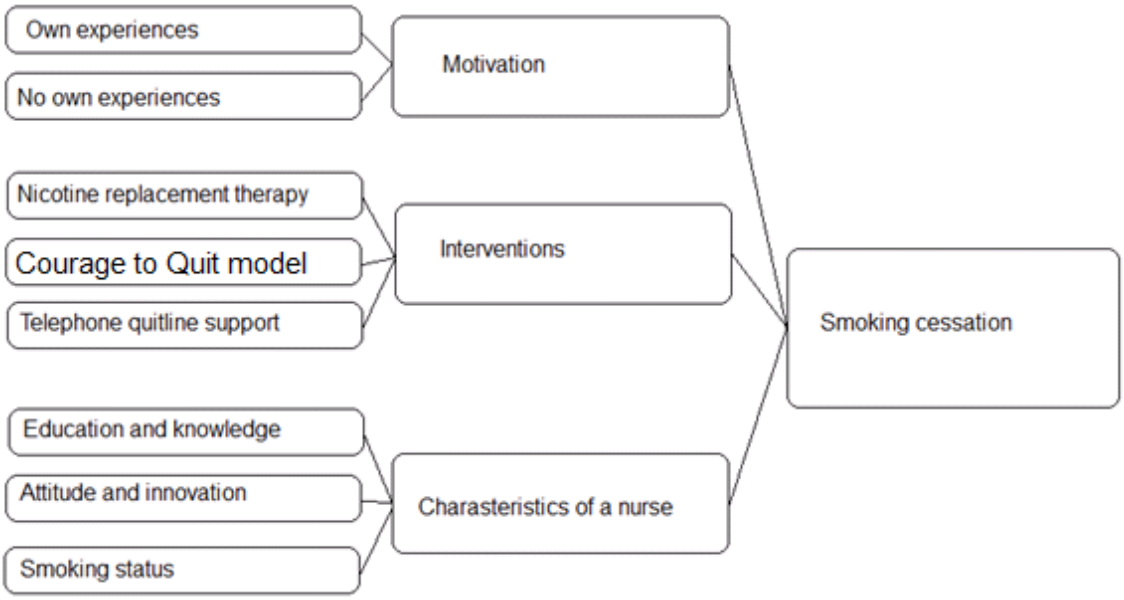

Figure 3. Abstraction process.

While in the ‘Interventions’ and ‘Characteristics of a nurse’ there were clear sub-categories created, the category ‘Motivation’ was decided to be written as its own unity. This was due to small amount of material under the title compared to the other titles.

8 RESULTS

The results are divided in two separate entities: the country comparison and the systematic literature review as they cover two different areas of the thesis.

8.1 Comparison between Finland and New Zealand

Geographically Finland and New Zealand are almost as far apart as two countries in the world can be, Finland being in Northern Europe, New Zealand in the Oceania surrounded by the South Pacific Ocean. When it comes to the population, there is only a slight difference, Finland having 5 401 000 inhabitants compared to New Zealand's 4 460 000 in 2012. Both countries are members of a larger international community as Finland has been a member of the European Union since 1995 and New Zealand has belonged to the Commonwealth since 1931. The monetary units in the countries are Euro in Finland (since 1999) and New Zealand dollar in New Zealand. The WHO lists both countries to be in the income group 'high'. (Finland 2013; New Zealand 2013.)

8.1.1 Smoking in numbers in Finland and New Zealand

As presented in figure 4, daily tobacco smoking amongst adolescents in Finland and New Zealand differ slightly. The similarity is that in both countries out of adolescents females smoke daily more than males. In Finland the difference is 2 percentage points and in New Zealand 0.9 (Finland 2013; New Zealand 2013).

That gender difference has changed by the time adult daily smokers are being observed. In 2012, out of those adults who smoke daily in Finland, males are in the majority by difference of 7.1% points. In New Zealand, the difference is smaller by being 1.4% points more for males. In total, adults who smoke daily in Finland are 17.8% of the population and 16.5% in New Zealand, the gap between the two countries being 1.3% points (Finland 2013; New Zealand 2013).

Comparing the 2012 numbers to those of 2011, it is noticeable that in Finland the amount of male smokers has increased by 1.9% points for males and 0.8% for females. The development in New Zealand has gone to the opposite direction as the amount of adult daily smokers from 2011 to 2012 has decreased by 0.8% points for males and 1.2% points for females (Finland 2013; New Zealand 2013).

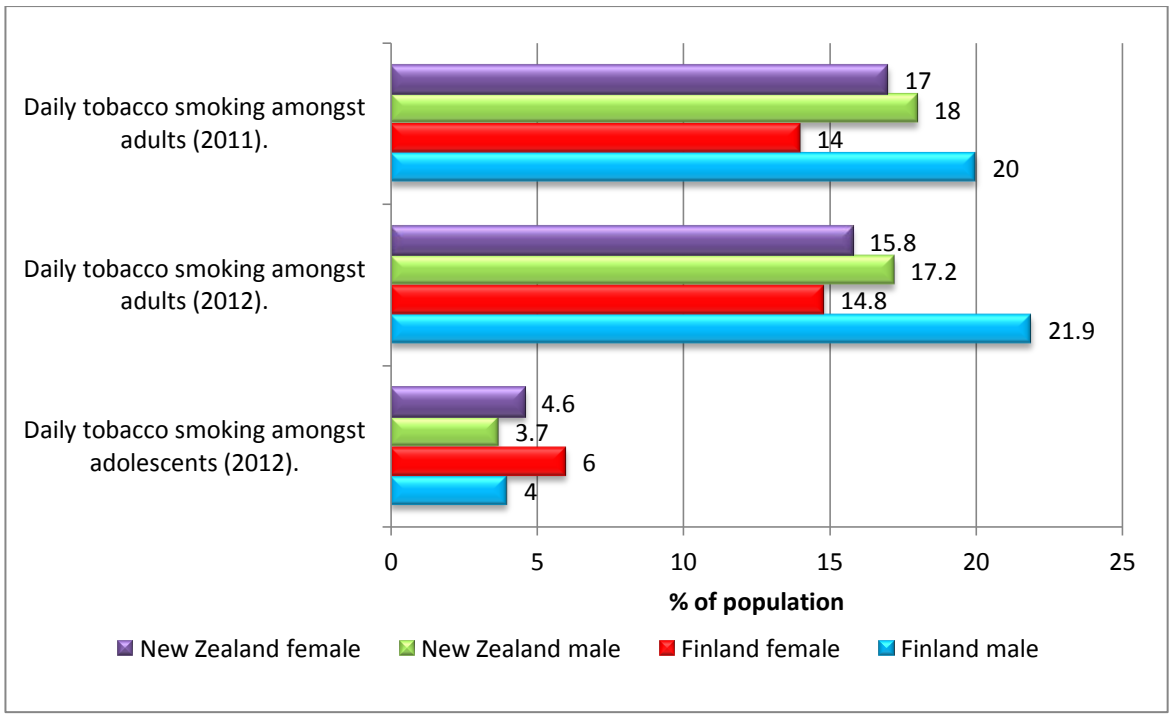

Figure 4 Daily tobacco smoking prevalence in Finland and New Zealand in males and females.

The change in the total number of adult daily smokers, as seen in figure 5, from 2011 to 2012 in Finland has been an increase of 0.8% points, whereas in New Zealand there has been a decrease of 1.5% points. Therefore, the change in the countries has been towards opposite directions (Finland 2013; New Zealand 2013).

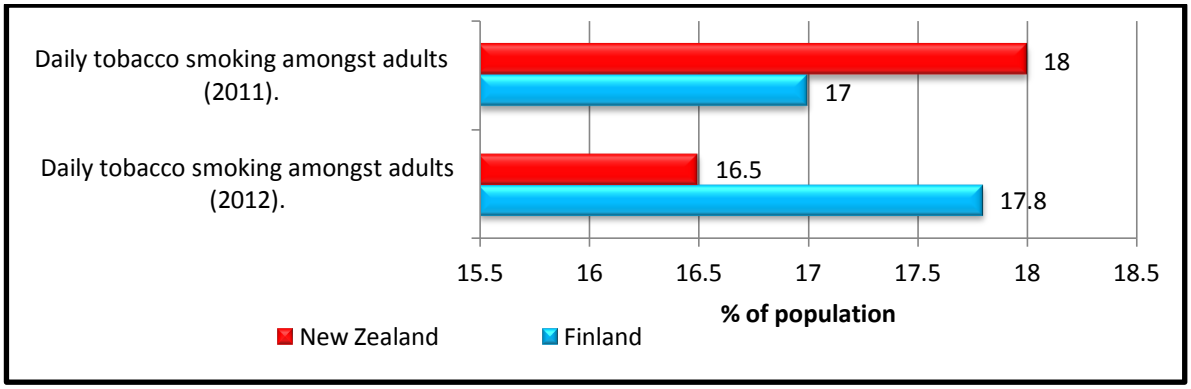

Figure 5 Daily tobacco smoking prevalence in Finland and New Zealand in total.

All tobacco prices in the chapter have been converted. According to the exchange rates on 1 May 2015 they were 1 USD for 0.88962 EUR and 1.31693 NZD. Comparing the prices according to figure 6, it is clear that prices of packages of 20 cigarettes – whether they are most-sold, lowest-cost, Marlboro or similar brand – it is clear that the cost in Finland is roughly half of that in New Zealand. The Finnish price of a country's most-sold brand package of 20 cigarettes is 45%, the price of a lowest-cost brand package is 41%, and the price of Marlboro or similar brand package is 45% of the New Zealand price of a comparable product (Finland 2013; New Zealand 2013).

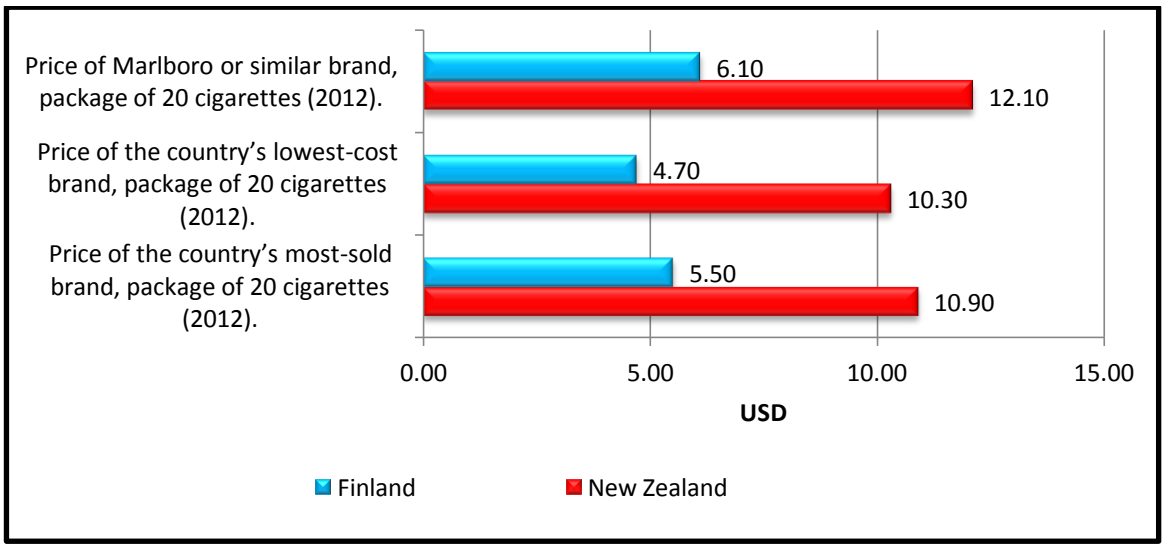

Figure 6 Prices of cigarettes in Finland and New Zealand converted into United States Dollar (USD).

Comparing the amounts of taxes on tobacco products between Finland and New Zealand according to the table 2, it can be seen that the total taxes of a most-sold brand's package of 20 cigarettes are higher in Finland than in New Zealand. The

difference is 5.5% points. However, the total taxes of the annual tax revenue from tobacco products are less in Finland than in New Zealand, the subtraction being 114, 672.00 USD. (Finland 2013; New Zealand 2013.)

Table 2 Tobacco-related taxes in Finland and New Zealand, monetary values converted from EUR and NZD into USD.

	Finland	New Zealand
Total taxes from the most-sold brand, package of 20 cigarettes in % (2012).	79.9	74.4
Total excise of the annual tax revenue from tobacco products in USD.	825, 217, 000.00	939, 889, 000.00

8.1.2 National efforts for smoking cessation in Finland and New Zealand

Both countries have set national objectives in tobacco control and also a national department for implementation. In Finland, the government expenditure on tobacco control was 2 256 000 EUR in 2012 (Joossens & Raw 2014, 19), and in New Zealand 62 000 000 NZD in the most recent year available. In USD as converted according to the exchange rate of 1 May 2015 (1 USD for 0.88962 EUR and 1.31693 NZD), these expenditures were 2 007 000 USD in Finland compared to 47 101 000 USD in New Zealand (New Zealand 2013).

While in Finland one public place was smoke-free by legislation, there were eight of those in New Zealand. In both countries there were laws to require fines for smoking in smoke-free public places, but in New Zealand the laws only concerned the establishment, whilst in Finland it also included the smoker. In both countries citizen complaints concerning tobacco use were registered and investigations arranged (Finland 2013; New Zealand 2013).

For smoking cessation support, NRT is sold in both countries in general stores without a prescription. In New Zealand it is in the country's list for essential drugs.

In both countries, bupropion and varenicline are sold in pharmacies with a prescription. In New Zealand the costs of NRT, bupropion and varenicline are fully covered, in Finland only partially. Both countries have smoking cessation support available in most health clinics, other primary care facilities and hospitals, and in New Zealand also in offices of health professionals and communities. The cost of this support in Finland is partially covered. In New Zealand, the support is fully covered in hospitals and partially in the rest (Finland 2013; New Zealand 2013).

Both Finland and New Zealand have laws requiring health warnings on cigarette packages. As table 5 displays, these laws require slightly different things – in Finland the size of the total surface area of a cigarette package required to be covered in warnings is less than two thirds of that of New Zealand's. The two countries require almost the same surface percentage to be covered of the front of the package, but when it comes to the rear, New Zealand requirements are twice more than Finland's. Furthermore, in Finland there are two fewer specific health warnings approved by law than can be used for cigarette packages than in New Zealand. In cigarette packaging or labelling, there are also laws in place to prevent potentially misleading customer information both in Finland and New Zealand. In Finland, having a quit line number presented on the package or labelling is not mandatory, unlike in New Zealand (Finland 2013; New Zealand 2013).

Table 3. Tobacco package health warning requirements in Finland and in New Zealand.

	Finland	New Zealand
% of cigarette package that must be covered by warnings.	39	60
% of the front of cigarette package that must be covered by warnings.	32	30
% of the rear of cigarette package that must be covered by warnings.	45	90
The number of specific health warnings approved by law used for cigarette packages.	14	16

Between the years 2011-2012 in Finland and New Zealand there were at least one mass media campaign against tobacco use in each country. In both countries the campaign included evidence-based planning and it did include a target audience research, but in Finland it was not pre-tested with the target audience nor was it a part of a larger anti-tobacco programme. In New Zealand, the campaign was both pre-tested and a part of a larger programme. In addition, the campaign in New Zealand was aired on TV or radio and it used PR relations unlike in Finland, but both countries did include media planning in the campaign. In both cases, the process and the outcome were evaluated (Finland 2013; New Zealand 2013).

8.1.3 National smoke-free projects of Finland and New Zealand

Both Finland and New Zealand were carrying out a project aiming at a smoke-free nation. In Finland, the project was called Savuton Suomi 2040, and in New Zealand it was Smokefree 2025. Savuton Suomi 2040 was started in 2006 and Smokefree 2025 in 2011. The years attached to the titles indicate a fifteen-year difference in the final goal. Savuton Suomi 2040 does not define the goal of the project in the same way as Smokefree 2025 (Savuton Suomi 2040; Smokefree 2025).

Savuton Suomi 2040 is run by seventeen different collaboration members and is funded by the RAY. Smokefree 2025, on the other hand, is run by the HPA and is funded mainly publically, but also partially by merchandising through which individuals can support the project. Savuton Suomi 2040 has no promotional products available for the public and it does not offer a way for individuals to support the cause (Savuton Suomi 2040; Savuton Suomi 2040 –verkosto; Smokefree 2025).

Savuton Suomi 2040 is provided in Finnish and in English. Smokefree 2025 is available in English, but it also has a “sister website” aimed for the Maori people which is also in Maori. Savuton Suomi 2040 offers activity for the public in a form of a smoke-free workplace competition. Smokefree 2025 offers activities for public in many forms such as information, tips and tools on smoking cessation, tips on communal smoke-free promotion, help on writing letters concerning tobacco

control to local newspapers and MPs, as well as smoke-free promotional running events. For health care workers, Savuton Suomi 2040 offers seminars concerning smoking cessation and tobacco use from a medical point of view, whereas Smokefree 2025 offers tobacco control seminars and workshops (Savuton Suomi 2040; Smokefree 2025).

8.2 Nursing interventions, their effectiveness and nursing-related factors affecting cessation

The literature review focused on smoking cessation interventions and nursing-related factors influencing the outcome. It also includes information about motivation for smoking cessation. Three particular categories and eight subcategories cover the topic.

8.2.1 Nicotine replacement therapy

The possibility to individually choose NRT for usage was felt considerably important for most of the participants. Almost all of the people who took part in the study felt that they had received a satisfied amount of knowledge of NRT. The most popular choices for NRT were patches and inhaler combination, second most popular was the combination of patches and 4 mg strength gum, and the third place was single use of patches. Less popular were sub-lingual tablets and oral pouches. The choice of NRT was not affected by age, gender, ethnic background, socio-economic background or severity of nicotine dependency. However, the factors affecting the choice were simplicity of use, little adverse effects and the taste. (Walker et al. 2011.)

The use of CPD was continuously decreased during the first three months. Only those who quit smoking altogether, without reducing the CPDs first, experienced occurrences of nicotine withdrawal symptoms and urge to consume cigarettes. For smokers who have better feasibility for NRT, better access to choices and better economical situation positively affects short term cessation rates of cigarettes. Yet, there were no higher long-term cessation rates discovered in the research. The

research brings out the idea that the free choice has no negative or positive effect, and therefore there is no reason to restrict the choice. Combination therapies are highlighted as more effective than the use of single NRT products. (Walker et al. 2011.)

It was found that pre-cessation reduced the amount of cigarettes smoked per day compared with starting NRT after quitting smoking, but it was not statistically that important. There were no benefits of using pre-cessation patches rather than gum. However using NRT decreased the amount of Cigarettes per Day (CPD) but continued smoking. Comparing between pre-cessation and cessation after quitting, there were fewer urges to smoke with the pre-cessation duration, but withdrawal symptoms were similar. (Bullen et al. 2010.)

Participants in the pre-cessation group were worried about the adverse effect on their health when using NRT together with smoking. Some were concerned about an overdose of nicotine, making the addiction worse and having no benefits of doing both NRT and smoking at the same time. Complications were that people did not use the NRT as prescribed or recommended. 68% of the participants felt that pre-cessation with NRT as useful, but the rest considered it to be of little or no help. The pre-cessation turned out to be modestly beneficial and there was no evidence of major side-effects from using NRT for two weeks before quitting smoking. (Bullen et al. 2010.)

8.2.2 The Courage to Quit (CTQ) intervention model

The main conclusions of the CTQ model use in urban smoker cohort according to Asvat et al. (2014) was that CTQ's short-term affectivity is moderate. However, a vast majority (90%) of the participants felt positive enough about the model to recommend it further. The 17-19% quit rates were also associated with the use of medication to support smoking cessation positively.

8.2.3 Telephone quit line practices

About half of the people who contacted the quit line mainly asked for self-help material rather than phone counselling, even when the self-help materials' efficiency was minimal. The study estimated that the participants were unsure that the counselling would be helpful in smoking cessation or there was some trust issues regarding the counsellors. (Bombard et al. 2012.)

Bombard et al. (2012) reported in the study that the cessation rates were low, and it takes many attempts before managing to quit smoking successfully. These efforts to try quit smoking are thought as positive even without permanent success, because they are still a steps forward. The research encourages the health care professionals to try and assist the client to quit smoking by advising them to contact smoking cessation quit lines. It should be highlighted that the health care personnel should encourage the clients to accept telephone guidance, where they can discuss with an educated professional to raise the success of smoking cessation.

According to Saul et al. (2014), the quit line intervention should be developed further hereafter, to reach the worldwide aims of tobacco cessation, to carry on the funding of the quit line and seek media opportunities to ensure that people are aware of the practices the quit line offers. It is suggested that more research is needed to notice the possible changes in trends and improve the knowledge of nurses to help in smoking cessation.

8.2.4 Motivation

Butler et al. (2010) assessed that the relatives of a cancer patient, who were thinking about quitting smoking, benefitted from being approached by the health care personnel, in the means of information about smoking cessation. It was felt as appropriate in that situation to offer help. The motivation to smoking cessation rises with the diagnosis of lung cancer, and it seems promising for the future of

cessation of both smokers and passive smokers. About 70% of the participants hoped to quit someday, but only 44% attempted quitting.

It is a great opportunity for the health care professional to try to help the whole family to stop smoking, in the case of lung cancer. It was concluded in the study that family support in smoking cessation was effective. There were many opportunities for the nurses to introduce smoking cessation health education and treatment options for the whole family during the period of patient receiving treatment. The families were reported to have insufficient methods of quitting smoking themselves, so offering support was described as an meaningful factor related to smoking cessation. (Butler et al. 2010.)

8.2.5 Characteristics of a nurse

Wong and Stokes (2011) raised the issue of necessary education of student nurses in relation to support people in quitting smoking. It was concluded that students should be trained to be able to adequately inform clients about different nursing interventions, such as NRTs and quit lines. Insufficient knowledge was estimated to be an obstacle in supporting with treatment. Proper knowledge and education in turn showed to give the nurses more confidence in helping the client to stop smoking. Alternative therapies, on the other hand, were not recommended, because of the lack of proof in helping in smoking cessation. Negative attitudes, lack of preparation and time, as well as smoking by students and staff were also assessed as a barrier in teaching about smoking and cessation.

A positive attitude to using smoking cessation treatments showed importance in the nurses' motivation to use and receive information about various interventions. The article assessed that traits, such as attitude and innovation, were considered essential in giving clients support in quitting smoking. Not only is it important to assure the personnel of health care of the benefits of different interventions, but encouraging a positive attitude towards the support they can offer better help for clients in smoking cessation. (Smit et al. 2013.)

Providing information about treatments in smoking cessation requires verbal interaction with the clients. Whyte et al. (2006) describes that the nurse should be alert and active to notice the hints the client gives to be able to positively interact with the client about smoking cessation. It was explained that it was the nurses' job to find educative opportunities in conversations with the client to initiate health information. It appeared to be more spontaneous and focused. Even when health information was proposed to the client, the discussion was not focused or not deep enough for it to progress to a stage where smoking cessation information can be given.

A study revealed that the nurses that are aware of Tobacco Free Nurse initiative used smoking cessation interventions in health care, asked and advised clients to stop smoking. From the participants in the research, about 84% asked about tobacco use, 86% gave advices and 63% evaluated the readiness to quit. A noted issue that surfaced in the study was that the nurses' status of smoking affected the nurses' interventions. (Sarna et al. 2009.)

9 CONCLUSIONS AND DISCUSSION

Each part of the thesis was intended to be thought-provoking and informative. The country comparison was found to be especially interesting, whilst the literature review provided both informal results and further questions. Reflecting on the thesis has raised motivation for further research on the topics.

9.1 Comparison between Finland and New Zealand

When it comes to the size of population and quality and accessibility of the health care system of both Finland and New Zealand, they are considerably similar. Therefore, the comparison between the countries was reasonable to conduct and the results can be implemented in practice.

In both countries there were noticeable correlations when it came to the change of amounts of daily smokers over age and gender. With adolescents, there were more female daily smokers than male ones, but when it came to adults the situation changed contrariwise. This raises questions on what makes female youth smoke more than males, and what happens in adulthood for the situation to change. When focusing on differences between the nations, in 2011 in New Zealand 18% of the adult population were daily cigarette smokers, while the percentage was 17 in Finland. In 2012, the situation changed and the fraction of smokers in Finland became bigger than that of New Zealand and also increased compared to the statistics of smokers in Finland in 2011. During those years, however, in New Zealand the fraction of daily smokers considerably decreased by 1.5% points. A question arises of what happened in Finland between the years 2011-12 and what factors influenced the increase in smokers. (Finland 2013; New Zealand 2013.)

Looking at the costs of cigarettes, it is easy to see that in Finland the price of a package of 20 cigarettes was half of what it was in New Zealand. For example, the price of each nation's most-sold brand was 5.50 USD in Finland and 10.90 USD in New Zealand. It is intriguing how much more expensive cigarettes are in New Zealand. Furthermore, even when the cost of cigarettes is half of New Zealand's,

why is the taxation still higher in Finland while in New Zealand the country receives considerably more taxes from tobacco products? The prices of cigarettes would influence the consumption of tobacco, reducing the epidemiological risk of lung cancer. Health officials in Finland could consider the possibility of increasing the price of cigarettes. This could also increase the tax revenue, which would have a positive influence on the Finish economy. Finland should learn from New Zealand that the costs of NRT and other medications should be covered for the smokers. In long term, the benefits could be greater than the costs. All in all, by increasing economical revenue from cigarette consumption Finland could first benefit from increased tax amounts, and then from the reduced health care costs deriving from smoking-related illnesses. (Finland 2013; New Zealand 2013.)

A fascinating fact when it comes to the differences between Finland and New Zealand is that Finland's governmental spending on tobacco control is millions of USD less than that of New Zealand. In addition, in New Zealand there were several more legally smoke-free public places than in Finland. Furthermore, the costs of NRT and other smoking cessation medicines are fully covered in New Zealand, meanwhile in Finland they are covered only partially. (Finland 2013; New Zealand 2013; Joossens & Raw 2014.)

When it comes to the cigarette package surface that is required to be covered in warnings, there is a big difference between Finland and New Zealand, as the requirement is considerably smaller in Finland, which decreases the exposure of warnings for the consumer. Finland has two more approved health warning on cigarette packages than in New Zealand. Finland, on the other hand, could highlight mass media campaigns more in outlets used by the public. Health officials in Finland could think whether the size of the tobacco warnings on the side of the cigarette packages could be made larger, so that people would notice them more easily. The Finnish officials could also rethink the necessity of the quit line number on the side of a package. On the other hand, health officials of New Zealand could consider looking at the two missing health warnings on the side of the packages that are approved in Finland and consider approval for them. (Finland 2013; New Zealand 2013.)

These two Smoke Free projects of New Zealand and Finland are really different. In New Zealand, the web pages of the projects are offered in both English and Maori, whereas in Finland the web pages were only in Finnish at first, then in English, but there is still nothing in Swedish, which is an official language of Finland. Smokefree 2025 offers several help options, advice, support in quitting smoking and promotional activities, as well as possibilities to influence and support the cause even though one was not a smoker. Savuton Suomi 2040 does not offer many opportunities for the public to participate in the project or even receive any assistance or support for smoking cessation from the web page. (Smokefree 2025 [Ref. 4 January 2015]; Savuton Suomi 2040 [Ref. 4 January 2015].)

9.2 Smoking cessation nursing interventions, their practical implementation and the characteristics of a nurse

The review described different interventions and the characteristics of nurses in the help of smoking cessation and using nursing interventions in practical settings. Nicotine replacement therapy has been assessed as an effective tool in helping a client to stop smoking in various methods, such as combination NRT therapy and giving clients the opportunity to choose NRTs freely. (Bullen et al. 2010; Walker et al. 2014.)

Asvat et al. (2014) provided the needed aspect on an intervention which takes place in a community and carries out evidence-based psycho education. While the results showed moderate rates in smoking cessation, the positive customer feedback on the interventions and the orientation-centeredness of the meetings make the method seem like a good option for an intervention carried out by a nurse.

The education of nurses is considered to be essential when giving information and helping the clients. The higher the motivation of a nurse, the better the nurse's cessation support. An interesting detail is how the smoking status of a nurse influence the way smoking cessation education and support are provided. According to the results, a nurse who smokes may provide compromised smoking

cessation advice and support. However, the experiences of a nurse with smoking background could be used in patient counselling.

When educating nurses, education usually focuses on supporting the general public while the support for fellow health care workers is missing. In addition, when it comes to nurses, education about smoking cessation could be compromised by their workload and stress. The ABC method should be highlighted in nurses' education to promote ways of smoking cessation methods, and the goal for nurses' education could be for the nurse to assess clients' smoking status routinely. In primary care settings, visits to the nurse during the smoking cessation process to enhance motivation could be organized.

9.3 Need for future research on the interventions and characteristics of a nurse

According to the conclusions, future research on smoking cessation interventions in reducing the risk of lung cancer is necessary. Even though multiple recent researches conducted on the topic exist, especially practical research results that can be easily implemented by health care personnel are still needed. The use and effectiveness of individualized approach to smoking cessation support would be important to study. It would be beneficial to study further how effective visits to a nurse in primary health care are during the process of quitting smoking.

9.4 Ethical issues and authenticity of the thesis

This thesis is a literature review. By using research articles, the chance of ethical issues is minimized as the researches do not include names or such personal data, and have already been ethically clarified.

The information presented in the text has been referred throughout the process which keeps the text reliable. The research articles used in the text are from valid sources such as nursing journals and research journals that are commonly known

as reliable, and are no more than 10 years old. Other sources, such as national guidelines, are from governmental or otherwise official websites.

The thesis will be submitted to Urgund, which prevents and reveals plagiarism. This way the authenticity of the text will be proved. Also, the authors have partaken in a maturity test, where questions were asked about the thesis in order to prove that they really have written the thesis themselves.

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APPENDICES

APPENDIX 1. Research articles used for the systematic literature review

Authors	Title	Publisher	Fundamental conclusion(s)
Asvat, Y., Cao, D., Africk, J.J., Matthews, A. & King, A. 2014.	Feasibility and Effectiveness of Community-Based Smoking Cessation Intervention in a Racially Diverse, Urban Smoker Cohort	American Journal of Public Health	CTQ model quit rates were moderate. Further evaluation is needed.
Bombard, J.M., Farr, S.L., Dietz, P.M., Tong, V.T., Zhang L. & Rabius, V. 2012.	Telephone Smoking Cessation Quitline Use Among Pregnant and Non-pregnant Women	Maternal & Child Health Journal	Self-reported quit rates after 7 months of initial quitline contact were 22.6% for non-pregnant women. Quitlines offer a useful and an affordable service for uninsured smokers. Cessation counseling should be promoted for smokers.
Bullen, C., Howe, C., Lin, R-B., Grigg, M., Laugesen, M., McRobbie, H., Glover, M., Walker, N., Wallace-Bell, M., Whittaker, R. & Rodgers, A. 2010.	Pre-cessation nicotine replacement therapy: pragmatic randomized trial	Addiction	Pre-cessation NRT caused no significant adverse effects. Pre-cessation NRT offered no additional benefit when compared to usual cessation methods.
Butler, K.M., Rayens, M.K., Zhang, M. & Hahn, E.J. 2010.	Motivation to Quit Smoking among Relatives of Lung Cancer Patients	Public Health Nursing	Nurses who are in contact with family members of lung cancer patients may be able to promote smoking cessation among them.

Sarna, L., Bialous, S.A., Kralikova, E., Kmetova, A., Felbrova, V., Kulovana, S., Mala, K., Roubickova, E., Wells, M.J. & Brook, J.K. 2014.	Impact of a Smoking Cessation Educational Program on Nurses' Interventions	Journal of Nursing Scholarship	After an educational program the amount of nurses offering cessation interventions increased. Smoking status of a nurse posed a challenge for effective cessation support.
Sarna, L., Bialous, S.A., Wells, M., Kotlerman, J., Wewers, M.E. & Froelicher, E.S. 2009.	Frequency of nurses' smoking cessation interventions: report from a national survey	Journal of Clinical Nursing	Frequency of nurses' smoking cessation interventions was positively associated with awareness of TFN. More work is necessary to increase the frequency in clinical practice.
Saul, J.E., Bonito, J.A., Provan, K., Ruppel, E. & Leischow, S.J. 2014.	Implementation of Tobacco Cessation Quitline Practices in the United States and Canada	American Journal of Public Health	A strong association was found between the successfulness of cessation attempts and the financial spending of the quitlines. A positive association was found between successfulness of cessation attempts and evidence-based methods used by the quitlines.
Smit, E.S., de Vries, H. & Hoving, C. 2013.	Determinants of practice nurses' intention to implement a new smoking cessation intervention: the importance of attitude and innovation characteristics	Journal of Advanced Nursing	Importance of nurses' own belief in the positive impact of smoking cessation. Effect of nurses' attitude towards interventions on cessation supporting.

Walker, N., Howe, C., Bullen, C., Grigg, M., Glover, M., McRobbie, H., Laugesen, M., Jiang, J., Chen, M-H., Whittaker, R. & Rodgers, A. 2011.	Does improved access and greater choice of nicotine replacement therapy affect smoking cessation success? Findings from a randomized controlled trial	Addiction	The free choice of nicotine replacement therapy for a smoker had no greater success rates than limited nicotine replacement therapy.
Whyte, R.E., Watson, H.E. & McIntosh, J. 2006.	Nurses' opportunistic interventions with patients in relation to smoking	Journal of Advanced Nursing	Smoking cessation guidelines being included in the nursing education would be beneficial. Use of opportunistic health counselling in short-term patient contacts would be recommendable.
Wong. G. & Stokes, G. 2011.	Preparing undergraduate nurses to provide smoking cessation advice and help	Nursing Praxis in New Zealand	In most nursing degrees preparation of undergraduate nurses to provide smoking and cessation advice and help is not sufficient.