

# **A description of implementation of WHO global strategies on Diet, Physical Activity and Health in Finland**

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## **BACHELOR'S THESIS**

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### **Summary**

The aim of this study is to investigate how to enhance the strategies of diet, physical activity and health to be effective for the Finnish population. A qualitative approach was applied in the thesis and content analysis was performed. The theoretical framework consists of Nora Pender's health-promotion model. This model informs health-care professionals about their roles as educators of, and advocates for, health-promotion through lifestyle changes and physical activity. The data analysis began by reviewing the literature several times to acquire themes that highlight the significance of accurate content. Four themes were formed: Support, Education, Communication, and motivation for good understanding of dietary guidelines.

The main result of this thesis shows how poor diet and physical inactivity are among the main causes of noncommunicable diseases and some cancer. Increasing awareness and acceptance by the population that they need food containing all nutrients that a person needs to be healthy is necessary, as well as increasing regular physical activity to maintain a healthy body weight. All this will help for economical, long-term growth on different levels: regionally, nationally and globally.

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## **EXAMENSARBETE**

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### **Sammanfattning**

Detta arbete ämnar undersöka hur man kunde förbättra WHO:s strategier gällande kost, fysisk aktivitet och hälsa för att bättre gynna den finländska befolkningen. Studien är kvalitativ och har innehållsanalys som sin metod. Den teoretiska grunden utgörs av Nora Pender's modell för hälsofrämjande. Denna modell informerar yrkesverksamma inom hälsovården hur de kan sprida och förespråka hälsofrämjande som sker i form av livsstilsförändringar och fysisk aktivitet. I analysen har man, genom upprepad litteraturgenomgång, identifierat följande temata som framhäver betydelsen av korrekt innehåll: Kommunikation, Stöd, Utbildning och god motivation för förståelse av kostriktlinje.

Resultatet påvisade att dålig kost och fysisk inaktivitet är bland huvudorsakerna till icke-smittsamma sjukdomar och vissa former av cancer. Det är nödvändigt att öka befolkningens medvetenhet om vikten av näringsrik mat och regelbunden fysisk aktivitet för att uppehålla en hälsosam kroppsvikt. Dessa råd kommer att bidra till en långsiktig ekonomisk tillväxt på regional, nationell och global nivå.

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Språk: Engelska      Nyckelord: nutrition and health, food policy, obesity, overweight, diet therapy, non-communicable diseases, physical activity, World Health Organization

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## **1. Introduction**

As stated in the Declaration of World Health (De Campos, 2012), health is a fundamental right of every human being. It is a precondition for wellbeing and quality of life. It is a criterion for progressing towards the reduction of poverty, as well as the promotion of social cohesion and the elimination of discrimination. The World Health Assembly is that part of the WHO which takes care of overweight and obesity cases. Good health status is essential for economically viable growth. Investment in intersectoral health does not only release new resources for health, but also has wider benefits, since it contributes to overall social and economic development in the long term. Investments in health care are focused on improving health outcomes and identify the resources which can be released to meet the increasing demands on the health sector. (De Campos, 2012)

However, the incidence of obesity in Finland has doubled since 1980. In the world overweight is estimated to 1.4 billion among people how are 20 years and older. More than 200million men and almost 300 million women of this group are obese. The problem is expected to affect approximately 43 million children by the year of 2010. Overweight and obesity has a 65 % higher death rate than underweight. (Jallinoja et al, 2007).

The anomalous or excessive accumulation of body fat that may impair health is called overweight or obesity. The body mass index (BMI) is a simple measure of weight relative to height which is frequently used to calculate approximate overweight and the amount of body fat in adults. It is calculated by dividing weight by the square of height in kg/m<sup>2</sup>. (Keski-Rahkonen et al, 2007)

Obesity constitutes the fifth highest-ranking risk factor for death in the world. At least 2.8 million adults die each year. In addition, 44% of diabetes, 23% of ischemic heart disease and from 7% to 41% of certain forms of cancers that are attributable to overweight and obesity. In general, more than one in ten adults is obese. (Forman-Hoffman et al, 2006)

About 40 million children under five will be overweight in 2010, (Forman-Hoffman et al, 2006). Once considered a problem only in high-income countries; overweight and obesity are increasing dramatically in low and middle income countries, particularly in urban areas. 35 million children who are overweight live in developing countries, whereas 8 million live in developed countries.

## **2. Aim**

The goal of this study is to investigate how to enhance the strategies of diet, physical activity and health to be effective for the Finnish population.

A program for enhancing public health, spreading information and preventing obesity should be commenced already in childhood. Healthcare professionals must help parents in this task, and support those who need to develop a more realistic perception of their weight status. Professional advice will increase their knowledge and provide them with the means to make choices towards a healthy lifestyle. Thus, obesity prevention should begin as early as possible in life, and all this will help the prevention of noncommunicable diseases.

The research question for this thesis is:

Are the strategies adopted by WHO helping Finnish society reduce the amount of overweight and obesity?

## **3. Theoretical Background**

The Global Strategy on Diet, Physical Activity and Health is, generally, used to promote health by enabling sustainable actions on an individual, community-based, national and global level. When combined, these actions are expected to reduce the morbidity and mortality related to poor diet and physical inactivity.

The purpose of global strategies is to reduce the risk factors for noncommunicable diseases linked to poor diet and physical inactivity. The strategies are performed through the provision of essential public health, health promotion and disease prevention; increasing the awareness and acceptance of how diet and physical activity have a positive impact on health and preventive measures. They are, finally, carried out through promotion of the development, support and implementation of universal, local, public and social policies and achievement plans to improve diets and amplify physical activity, as well as through active participation in all sectors, including the civil, the private sector and the media. (Roos & al, 2002)

In May 2004, the 57<sup>th</sup> World Health Assembly adopted the strategies on Diet, Physical Activity and Health that focus on the two major risk factors for either disease: poor diet and lack of exercise. A radical change in the distribution of significant causes of mortality and morbidity that has already occurred in developed countries, and is currently being fulfilled in many developing countries. Globally, noncommunicable diseases have increased quickly: in 2001; they constituted virtually 60

% of 56 million annual deaths, and 47 % of the global disease burden. Based on these figures, and the anticipated growth morbidity, the prevention of noncommunicable diseases is an important health issue for the global public. (WHO, 2004)

In most countries, a number of significant risk factors are responsible for most of the morbidity and mortality- the greatest risk-factors for noncommunicable diseases are hypertension, hypercholesterolemia, low consumption of fruits and vegetables, overweight and obesity, physical immobility and smoking. These risk factors are closely related to diet and physical exercise.

Poor diet and physical inactivity are, therefore, among the main causes of major noncommunicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer, and they also account for the majority of morbidity, mortality and disability on a global scale. Other diseases related to diet and physical activity, such as dental caries and osteoporosis, also cause widespread morbidity-especially in developing countries, where the rate of mortality, morbidity and disability is now significant and continues to grow. Such countries report a 66 % death rate from noncommunicable diseases. Those affected by these diseases are, also, on average, reported to be younger than in developed countries (WHO, 2014).

In countries with low and medium income, risk factors, and the consequent of noncommunicable diseases, initially affected mainly affluent groups. Recent data shows, however that these health problems are also concentrated to poor communities, and subject to socio-economic equalities. Determinants of noncommunicable diseases are mostly the same in all countries: high consumption of high-calorie foods that are poor in nutrients and high in fat, sugar and salt; insufficient physical exercise practiced at home, at school, at work, on holidays and consumption of tobacco. The varying levels of risk and health effects are partly due to changes in time intensity, economic changes, demographic differences and social levels nationally and globally. A poor diet, inactivity and energy imbalances are particular risk-factors among children and adolescents in their later life. (Barengo et al, 2006)

Health and maternal nutrition before and during pregnancy can play an important role for children in the pre-prevention of noncommunicable diseases. Exclusive breastfeeding for six months followed by appropriate complementary feeding contributes to physical growth and optimal mental development. Diet and exercise influence health both together and separately. Diet and exercise often have combined effects on health, particularly with regard to obesity, whereas exercise offers additional health benefits regardless of nutrition and diet. Physical exercise is a fundamental means of improving the physical and mental health of individuals. (WHO, 2004)



Governments, in co-operation with other sectors, must encourage and assist individuals, families and communities in following a healthy diet and engaging in physical activity. Non-communicable diseases cause major economic burden for health systems that are already solicited and very costly to the public. Well-being is a key determinant for improvement of and precursor to economic growth.

### **3.1 Classification of overweight and obesity by World Health Organisation**

WHO defined obesity as *"a body mass index (BMI) of 30 kg/m<sup>2</sup> and higher. Overweight is defined as a BMI between 25 and 30 kg/m<sup>2</sup>. The prevalence varies considerably between countries and between regions within countries. It is estimated that more than half of adults aged 35-65 living in Europe are either overweight or obese."* (Saaristo et al, 2008)

Overweight is more common in men than women, but obesity is more common in women. The prevalence of obesity is about 10-20% among men and 15-25% among adult women. Most European countries have found that obesity appears to be increasing. (Saaristo et al, 2008)

In European countries, obesity is usually contrariwise associated with socioeconomic status, especially among women. Recent classifications of overweight focus on cut-off points for easy anthropometric measurements that reflect both total adiposity and abdominal adiposity.

**Table 1: The International Classification of adult underweight, overweight and obesity according to BMI**

Classification	BMI(kg/m <sup>2</sup> )	
	Principal cut-off points	Additional cut-off points
<b>Underweight</b>	<b>&lt;18.50</b>	<b>&lt;18.50</b>
Severe thinness	<16.00	<16.00
Moderate thinness	16.00 - 16.99	16.00 - 16.99
Mild thinness	17.00 - 18.49	17.00 - 18.49
<b>Normal range</b>	<b>18.50 - 24.99</b>	<b>18.50 - 22.99</b>
		<b>23.00 - 24.99</b>
<b>Overweight</b>	<b>≥25.00</b>	<b>≥25.00</b>
Pre-obese	25.00 - 29.99	25.00 - 27.49
		27.50 - 29.99
<b>Obese</b>	<b>≥30.00</b>	<b>≥30.00</b>
Obese class I	30.00 - 34.99	30.00 - 32.49
		32.50 - 34.99
Obese class II	35.00 - 39.99	35.00 - 37.49
		37.50 - 39.99
Obese class III	≥40.00	≥40.00

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004

The recommendation of WHO BMI cut off points (table 1) should be retained as the international classification, but the cut off points 23, 27.5, 32.5 and 37.5 kg/ m<sup>2</sup> are supplementary points for public health achievement. It is recommended that countries should use all categories in several different populations to make comment resolutions for international assessments.

#### 4. Previous Research

The articles that were used in this study were found through the electronic database EBSCO with the key words: nutrition and health, food policy, obesity, overweight, diet therapy, noncommunicable diseases, physical activity, World Health Organization.

##### 4.1 Definition of World Health Assembly

The World Health Assembly is the decision-making body of WHO. It is attended by delegations from all WHO affiliate states and focuses on a particular health program prepared by the Executive Council. The major functions of the World Health Assembly are to outline the policies of the

Organization, appoint the General Director, supervise financial policies, and review and approve the proposed program budget. The Health Assembly is held every year in Geneva, Switzerland. (WHO 2013)

#### **4.2 Implementation of WHO's strategies on Diet, Physical activity and Health in Finland**

After extensive preparatory work and consultations, the World Health Assembly adopted the Global Strategies on Diet, Physical Activity and Health in 2004. The WHO strategy inspired and has been linked to, a number of activities in the WHO regions and Member States. The overall increase in obesity, the severe increase in non-communicable diseases all over the world, especially among young people, has become a major focus in the public policy agenda-this focus has been expressed through policy development and programs related to food and corporal movement. (Puska & Ståhl, 2010). Studies and experience in Finland have convincingly demonstrated the potential role of diet and physical activity in disease prevention and health promotion. A Diabetes Prevention Study showed how changes in diet and physical activity can prevent type II diabetes in a powerful way. (Monteiro et al, 2004)

The Finnish Government in collaboration with the World Health Organization has managed to implement an intervention aimed at reducing the levels of obesity and overweight. The intervention also aims at reducing the public intake of cholesterol, saturated fats and salt, as well as increasing the consumption of fruit and vegetables. (Räihä et al, 2012)

In Finland, there are a variety of measures to promote healthy lifestyles: the media, schools, mass catering, the health care sector, legislation and other state policies. The media campaigns aim at raising awareness about products with high levels of saturated fat. In schools, the weight is controlled by the school, sugary drinks are prohibited, and exercises are fully integrated into the school curriculum. All school children receive free meals each day and the meals of university students are subsidized. Finnish parents receive information on nutrition for children through maternal health services. Some laws have been used to limit and introduce the mandatory labelling of the salt content of some foods. (Räihä et al, 2012)

No one can take better care of your health than you, and the public responsibility is to make healthy choices easy. Personal behaviour is often governed by the circumstances in which people live and work. It affects their level of exposure to individual risk factors. Up to 80% of diseases caused by overweight and obesity could be prevented through changes in lifestyles; some forms of cancer

could also be prevented by eating healthy, maintaining a healthy weight and being physically active throughout their life (Finnish National Institute for Health and Welfare, 2010)

According to the Finnish National Institute for Health and Welfare, (2010) Finland has shown that the prevention of cardiovascular diseases is possible and profitable. This prevention was based on the community health approach, more competent public health in prevention of cardiovascular disease. The prevention outlines simple changes in lifestyle for the individual, family, community, as well as on a national and global level. Reducing fat is a key issue in the prevention of many cardiovascular diseases and diabetes; research has shown encouraging results and the issue has gained strong political support from the state.

Finnish research has convincingly demonstrated the potential role of diet and physical activity in disease prevention and health promotion. Diabetes prevention has shown how changes in diet and physical activity can prevent type II diabetes effectively. The North Karelia Project has shown how changes in diet, physical activity, and, for example, the reduction of blood cholesterol levels and blood pressure contributed to health-promotion and significantly reduced rates of noncommunicable diseases. (Finnish National Institute for Health and Welfare, 2010)

In the 1970s Finland faced an exceptionally high mortality rate of cardiovascular disease and had to start performing prevention work. Out of the 35 million people who died in the world because of non-communicable diseases in 2005, 17.5 million died of cardiovascular disease, half were under 70 and half were women. The process was first started in the province of North Karelia and later throughout all Finland: it was heavily focused on changing diets, encouraging physical activity, using high-quality fats and vegetables, and reducing the blood cholesterol levels of the people. The Finnish approach was comprehensive - all systems were involved; health education, public health services, work in schools, extensive collaboration with Non-governmental organizations and the private sector, government policies, and the monitoring and assessment based on people and international collaborations. (Finnish National Institute for Health and Welfare, 2010)

The work advocated dramatic changes in diet and reductions of cholesterol in the blood. It led to an 80% reduction of the annual mortality rates from cardiovascular disease in elderly people, and worked to significantly increase life expectancy and improve functional capacity and health. Reducing cholesterol levels in the blood, which can be explained by changes in the targeted food, had the greatest impact on the health of these very positive changes. Thus, the Finnish experience shows both the feasibility and high potential for prevention of cardiovascular disease and promoting

health through dietary and physical activity changes in the general population. (National Institute for Health and Welfare, 2010)

### **4.3 Origin of Overweight and Obesity**

Globally, more people are affected by overweight and obesity due to a diet high in fat and calories which leads to an imbalance of energy and an increase in adipose tissue. Obesity and overweight are becoming more common. Our way of life, which has fundamentally changed in recent decades, seems to be responsible for this development. Our diet is too rich in fat and calories, while we, at the same time, move less because of many innovation technologies. In other words, our diet provides us with considerable energy that our sedentary lifestyle renders useless, to some extent. This imbalance sets aside unused energy in the form of adipose tissue that result in weight gain. (Laitinen & al, 2004)

#### **4.3.1 Genetic factors**

Obesity is a complex disease that stems from the interaction between a multitude of genetic and environmental factors. The combination of quantitative genetics, genomics and bioinformatics, provides an overview of the genetic basis and molecular obesity. The concentration of cases in the same family, the high rate of resemblance in monozygotic twins with consideration to body mass and the discovery of genes associated with obesity are factors that explain the genetic component of obesity. (Rokholm et al, 2011)

Our day, overweight and obesity are situation that tend to be observed in families. The risk for obesity is approximately two to eight times higher in people with a family history of the condition, compared to an individual without a family history of obesity -the highest risk being observed in cases of severe obesity. The heritability of obesity varies with phenotype and it tends to be higher for the phenotypes associated with the distribution of body fat ( 40-55 %) than for phenotypes resulting from excess weight or body fat (5-40 % ). Weight gain and adiposity that occur with age are also influenced by heredity. (Rokholm et al, 2011)

The existence of monogenic forms of obesity proves that obesity may be caused by genetic mutations, but other form of obesity related to gene mutation are now visible worldwide. The most common forms of obesity are probably related to changes in a larger number of genes. Variations in the sequence of various genes have been described in association with the phenotype of obesity, but some of these genes were positive. In addition to these rare cases, some people have a genetic

predisposition conducive to obesity. Scientists have identified several genes that predispose obesity. The combination of an obesogenic environment and a genetic predisposition almost undoubtedly leads to the development of obesity. However, you can be obese without adverse genetic factors. (Rokholm et al, 2011)

Genetic factors may be involved in the causes for obesity, and occasionally for very rare cases of severe obesity; such genes are generally associated with other risk factors, such as food consumption and energy expenditure. The identification of these genes will identify the etiology of obesity and its metabolic complications- this will allow for the identification of individuals at risk based on their genetic profile, and the consequent development of strategies for prevention and treatment. (Rokholm et al, 2011)

#### **4.3.2 Environmental Factors**

The first choice for the population for an unhealthy diet and large portions is predisposed by marketing, the food environment and over obesogenic influences. Food and nutrition environment are believed to be the main contributors to obesity and noncommunicable diseases.

#### **4.3.3 Diet and Physical activity**

If you are obese or overweight, you have a bigger risk of developing many health problems. Weight loss can help you reduce these health risks. The best way to lose weight or maintain a balanced weight happens through lifestyle changes. Finnish food recommendations outline how the maintaining of public health requires reductions in total dietary fat (especially saturated fat), acid consumption, transfatty acids, sugar and salt. The recommendations encourage an increased intake of fruits and vegetable. The Global Strategy on Diet, Physical Activity and Health motivated the innovation and implementation of comprehensive regional and community policies and action plans to improve the nutrition of the people. (Enwald & al, 2011)

The goal of the Finnish recommendations is to improve the dietary lifestyle of the Finnish people as well as public health, by ensuring a balance between energy intake and energy expenditure, intake balanced nutrients, decreased fat intake, refined sugar and salt, and an increase of the consumption of carbohydrates that are high in fiber. Obesity and overweight means that you are carrying excess body fat. Being overweight or obese is not just the way you are. Over time, this means that you have an increased risk of developing various health risks. (Enwald & al, 2011)

If you are overweight, measuring your waist circumference can also provide information on the risk of developing health problems such as coronary heart disease, or type 2 diabetes. If two people who are overweight or obese have the same BMI, the person with a larger waist circumference is at higher risk of developing health problems because of the weight. If a person carries excess fat, the place where one carries it makes a difference. The health risks are higher, if you carry a lot of extra fat around your waist (apple-shaped), rather than primarily on the hips and thighs (pear-shaped). The greatest way to calculate your waist circumference is to put the ribbon measure around your waist at the navel. (Enwald & al 2011)

#### **4.3.4 Sleep and obesity**

We spend a third of our life sleeping. Sleep is necessary for the maintenance of physical, mental and emotional functions. Sleep disorders decrease the ability to think quickly, work efficiently, and to associate freely, which makes you feel disconnected from the world. In some serious cases sleep disorders can lead to severe neurasthenia and depression. Obesity is a major risk factor for sleep disorders, as it can cause symptoms such as obstructive sleep apnea. Obstructive sleep apnea has an estimate of to 2% to 4 % among adults aged 30-60 years and the condition is becoming increasingly prevalent. It is significantly linked to morbidity and mortality. In addition, insomnia is a common sleep disorder that decreases the quality of life in both physiological and psychological aspects. (Lallukka et al 2012)

Sleep deprivation can increase the risks of becoming obese. People who do not attain enough sleep become too tired to engage in physical activity, and since they are awake longer, they have more opportunities to eat. Simply because they are awake longer and have more opportunities to eat. To be deficient in sleep can affect the balance of key hormones that control appetite; people who do not get enough sleep are hungrier than those who get enough rest each night.

The most frequently cited effects of sleep deprivation are hormonal disorders; particularly in connection to the hormones leptin and ghrelin. Ghrelin is involved in sending hunger signals, and leptin helps tell you that you are full - when you do not get enough sleep, your body has too little of leptin and much ghrelin. Diet and physical activity play an important role in this area, but an additional factor may be sleep of short duration and poor quality. Insufficient sleep is associated with an increased risk of obesity by deregulation of appetite, which leads to an increase in energy consumption. When getting less than six hours of sleep, this may increase body mass index (BMI) or obesity. (Lallukka et al 2012)

#### **4.3.5 Socioeconomic differences**

Previous research based on data from FINBALT showed significant changes in the lifestyle of the Baltic countries. However, gender and socioeconomic status seem to be stable over time. Generally, women on a higher socioeconomic level are healthier than men on a lower socioeconomic level. There are, however, many public health issues that require effective action in all countries. The media does not show a decrease in or equal level of, socioeconomic status. People attaining low levels of instruction more often smoke, eat less vegetable, are less physically active, and assess their health less compared to those with an education. (National Institute for Health and Welfare, 2011)

Daily smoking, as well as excessive and frequent consumption of alcohol is more common in men than in women in all countries. In addition, women eat more vegetables and are less overweight, and more physically active. Comparing to men regardless of the overall positive image of health behaviours, the results are alarming regarding differences socioeconomic status and gender; high levels of alcohol consumption increasing the prevalence of physical activity in overweight and obesity. Estonia, Finland, Latvia and Lithuania should take measures to obstruct health inequalities by paying more attention to policies that might increase favourable health behaviours in men. (National Institute for Health and Welfare 2011)

#### **4.4 Consequences of overweight and obesity**

The relationship between lifestyle and obesity is important public health issue throughout the world. Physical inactivity and excess body mass are associated with a number of risk factors related to health and are also autonomous risk factors for cardiovascular disease, type 2 diabetes and many types of cancer. (Puska & Ståhl, 2010)

The frequency of immobility and obesity and their harmful consequences are rapidly growing in both developed and developing countries. Several recent reviews have evaluated the relationship between physical activity and cardiovascular disease, cancer and all causes of mortality. It was concluded that individuals who report regular physical activity are less likely than sedentary individuals to die from coronary heart disease, cardiovascular disease, certain forms of cancers and all aetiologies. Many, but not all, earlier studies have reported a curvilinear union between body weight and mortality, where there is an increased risk among both people who are very lean and very heavy. In the majority of studies, the enlarged risk for very lean individuals attenuated or even disappeared after not including smokers or subjects with pre-existing diseases. A moderate or high



level of cardio respiratory fitness is most likely defensive against the surplus of mortality among both people who are of normal weight and obese. (Wang &Lim 2012)

## **5. Theoretical Framework**

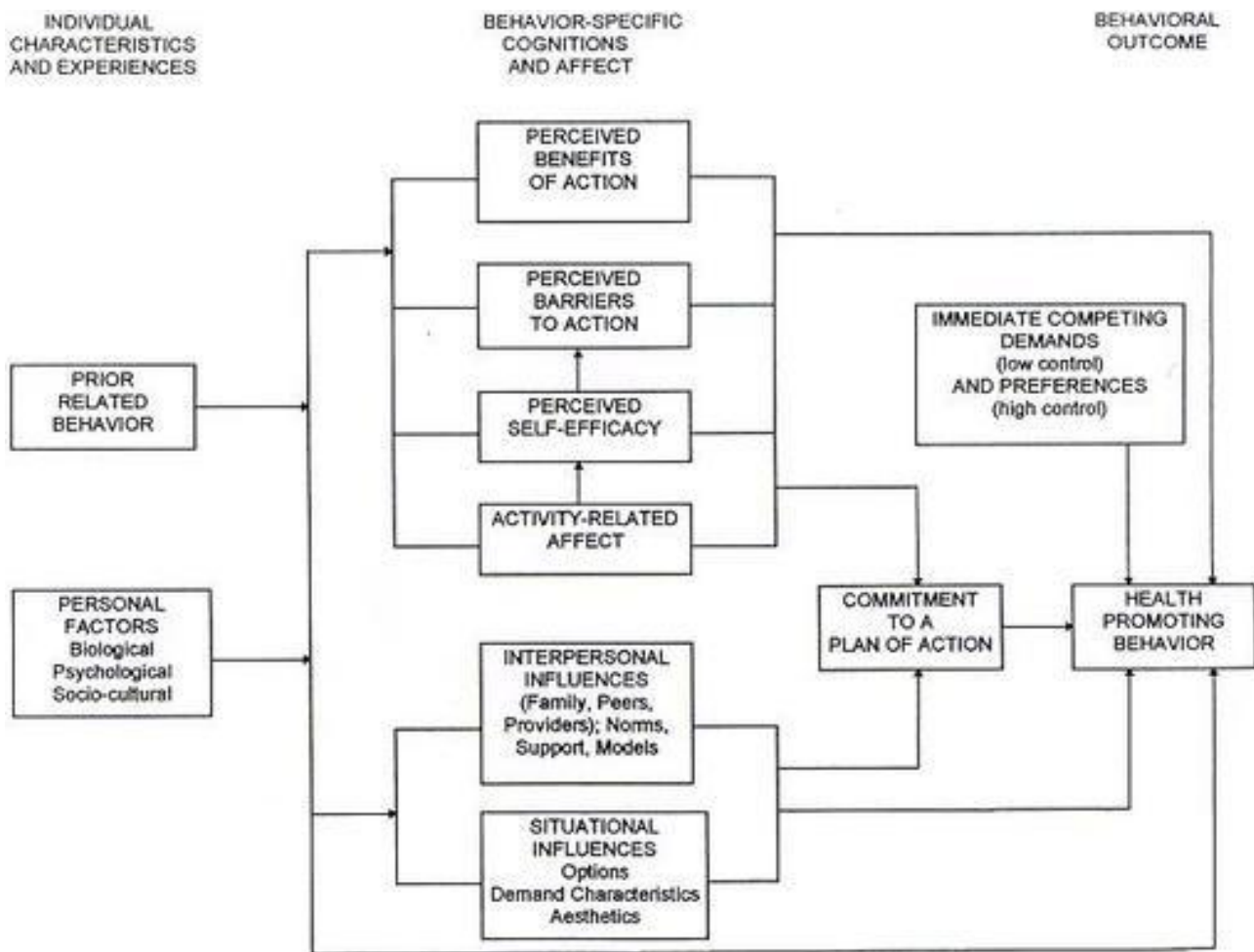
The research will focus on Nola Pender's Health Promotion Model (2006), where Pender outlines the distinctions and similarities between health promotion and disease prevention. Health promotion is defined as "*behaviour motivated by the desire to increase well being and actualize human health potential. It is an approach to wellness.*"(Pender et al, 2006). Health protection and disease prevention are, nevertheless, defined as motivational for avoiding the disease, discovering it in time and promoting functional abilities during the disease.

### **5.1 Nola Pender's Health promotion model**

With regards to the magnitude of health costs, health promotion has been vital for everyone and public health. The important point is that health promotion not only prevents diseases; it also describes behaviours that will increase the longevity and quality of a person's life. It can provide the person with a sense of well-being and peace, as well as increase energy and prevent social problems including violence and suicide. Adolescents may be valued in the intervention and encouragement of health promotion, since they are not completely independent in their lifestyle choices, and are vulnerable to the influence of the environment in positive and negative ways. (Pender et al, 2006)

I have also been in touch with Nola Pender about health promotion: she gave me the permission to use her table and she sent me more information about health promotion; she was happy to have her model in my thesis.

Figure1



Pender's health promotion model as used in this study. Adapted (with permission) from Health promotion in nursing practice (6 ed.) by (Pender et al 2006)

Health is "The actualization of inherent and acquired human potential through goal-directed behaviour, competent self-care, and satisfying relationships with others while adjustments are made as needed to maintain structural integrity and harmony with relevant environments." (Pender et al, 2006)

Health promotion presupposes that each person has different qualities and experiences that affect their success. These variables can be modified through nursing actions. The health promoting behaviour is the required performance outcome and the end point of the health promoting model. It should result in improved health, better functional ability, an enhanced quality of life and certain stages of development. "The final behavioural demand is also influenced by the immediate competing demand and preferences, which can derail an intended health promoting actions." (Pender et al, 2006)

The term behaviour alteration describes why people adopt certain behaviours. All people have common elements such as self efficacy and motivation. *"Self-efficacy is one's belief in their ability to do something such as change health related behaviour, and it is grounded in one's past success or failure in a given activity. One's self efficacy is seen as predicting the amount of effort one will expend in trying to change."* (Pender et al 2006)

(Pender et al 2006) *"The alarming increase in the prevalence of overweight and obesity in both adults and adolescents is thought to be due to genetic influences, as well as the environment, influences, namely dietary and physical activity behaviour."* A person needs to integrate fundamental improvement which contains different aspects: the value of interpersonal relationships, a healthy diet, live in good condition, easy access to healthcare, access to information, and doing physical activity or other types of relaxation in order to have a good emotional, intellectual and social development.

*"The benefits of physical activity contribute to physiologic stability, and assist the person to actualizing their physical performance potential. The upholding of regular physical activity dependent on individual and social motivation within the day to day environment."* (Pender et al 2006)

According to Pender et al, (2006) *"Promoting healthy diets and nutrition, 60% of the death in the world are due to chronic diseases such coronary artery disease, cardiovascular, cancer, diabetes, and obesity. A large percentage of these diseases could be avoided as they are either initiated or accelerated by unhealthy nutrition, in addition to other aetiologies. Food and activity choices are influenced by food preferences portion sizes and inactivity as well as culture, socioeconomic status adverting, the built human made environment and other obesogenic factors. Successful dietary change first requires an understanding of the dietary guidelines."* Lifestyle change and physical activity have a vital role in our lives. We should take it in consideration.

We must notice that the goal of weight control education is that the person will not only understand his present situation but also to be able to make lifestyle decisions, and make all the necessary changes to reach the optimal point. When the person get effective education, a satisfaction of her needs, an increased quality of life, good progress of care, decreased anxiety, and avoids complications in her adherence to weight plan, it will be beneficial to the person. The health care provider must assist the person in the improvement and development of his capacity to get effective self-care. (Pender et al, 2006)

## **6. Methods**

Research methodology refers to techniques that allow the researcher to structure a study, as well as collect and analyze the information that is important for the research question and the aim. In this study, I will use a qualitative research method; it is suitable for this study because it allows the researcher to construct an outline about what has been learnt. (Polit & Beck, 2012).

The search for relevant material sources was done using the EBSCO and CINAHL databases. The key words were nutrition and health, food policy, obesity, overweight, diet therapy, noncommunicable diseases, physical activity, and World Health Organization. The chosen articles were from 2000 to 2012. The respondent will analyse a description of the implementation of WHO's global strategies on diet, physical activity and health in Finland it will be conducted as a literature review in order to obtain the public health tools to make the strategies more effective for the Finnish population.

I have tried to obtain recent information about obesity on different levels by contacting the Vaasa Central hospital nutritionist and THL in Vaasa, however, I did not obtain any information from them, and they referred me to THL in Helsinki. Satu Männistö then provided me with recent information about overweight and obesity in Finland. I also gathered material from EBSCO and CINAHL and the National Institute for Health and Welfare-website. I have been in touch with one municipality in Finland which hosts the evidence base for obesity management the Terveystietä - Finnish Health Portal and they do not actively follow the WHO- strategies. However, all of them have the same goals.

### **6.1 Qualitative research**

A qualitative research method will be used in this thesis, as it constitutes a flexible approach to the collection and analysis of data. As defined by Polit and Beck (2008), a qualitative research is a study of phenomena, usually through an exhaustive and holistic method, carried out through the gathering and collection of data, using a variety of sources and a diversity of methods.

At the planning stages, the qualitative researcher should reflect on how the outcomes of the research will be useful to the public health sector, and also search for opportunities to improve the evidence-based practice potential for public lifestyle change.

Applied qualitative research may have a more or less learned orientation depending on the primary audience. If the primary audience consist of scholars, then applied research will be judged by the

Values of basic research, precise research rigour and contribution to theory. If the primary audience consist of policy-makers, then the significance, lucidity, importance, and applicability of the findings will become most important. (Patton, 2001)

## **6.2 Content analysis**

Content analysis is a study method for creating valid and reproducible inferences from texts and their contexts of use. Content analysis involves specialized procedures and provides new insight into a particular phenomenon. (Cole, 1988)

The advantages and disadvantages of content analysis

- Content analysis can be allocate for both qualitative and quantitative research
- Can give a chronological, cultural overview of value over time through the study of texts
- Is a discrete way of analyzing interactions

*"The disadvantage of content analysis relates to research questions that are ambiguous or too extensive. In addition, excessive interpretation on the part of the researcher poses a threat to successful content analysis."* (Elo & Kyngäs, 2008)

The qualitative research method has three major challenges. The first one is that there are no universal rules for analysing qualitative data (Polit & Beck, 2008) the absence of standard analytic actions makes it difficult to explain analysis procedures, and how to present findings in a way that manifests their validity. The second challenges lies in the extensive amount of work required. Qualitative analysis must structure and makes sense of large quantities of narrative materials. The pages need to be read, re-read and them organized, integrated and interpreted. (Polit & Beck, 2008). The final challenge lies in the process of reducing data for reporting purposes. Quantitative results can often be abridged in tables, but qualitative researchers must, by distinction, balance conciseness with the need to preserve the richness and evidentiary value of their data.

## **7. Results**

The problem definition stated at the beginning of the thesis is: Are the strategies adopted by WHO helping Finnish society to promote the number of overweight and obese?

This study is based on the concepts of overweight and obesity, and how engaging in effective communication and understanding the importance of physical activity and dietary guidelines will benefit society. The purpose of this study is to discover the factors that cause overweight and obesity

and initiate lifestyle changes by improving the diet and level of physical activity in Finland. The most important themes emerging from the theory and the articles are: Support, Education Communication, and Motivation for good understanding of dietary guidelines.

In this section, the respondent will present the results which have emerged from the collected articles. The results have been extracted through content analysis. They have been grouped into themes and sub-categories. A significant review of the literature provided me with answers to the research question.

According to Pender et al (2006), physical activity is an important part of personal health status her evaluation is a critical part of nursing assessment because a sedentary lifestyle, for many individuals starts early in childhood and continues into adulthood. Regular physical activity contributes to physiologic stability and a high functional level. It also assists individuals in actualizing their performance potential. The family is the primary social structure for health promotion, as health-promoting as well as health-damaging behaviours and lifestyles are learned within the context of the family.

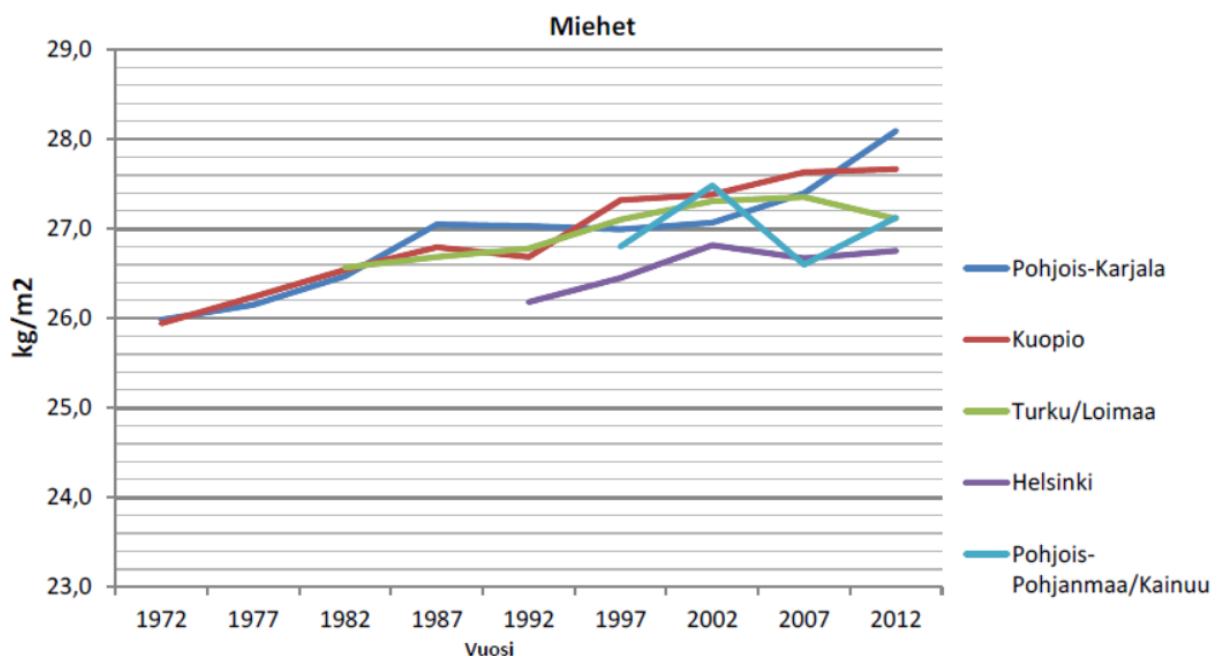
Obesity is one of the most important public health problems in our country. Worldwide obesity has doubled in the last 30 years. At the moment, the amount of overweight people is estimated to over one billion, and approximately. Obesity increases the risk for morbidity, type 2 diabetes, heart and vascular diseases, musculoskeletal diseases, and a number of cancer types. The health expenditure of obese people is estimated to be 25 % higher than that of people with a healthy weight. Obesity requires 330 million € of the total annual health care costs. The majority of expenses are medical expenses and disability pensions. The current standard of living, the living conditions and lifestyle changes have contributed to the proliferation of overweight and obesity. Energy consumption has been reduced to physical work and daily activity. Excess energy accumulates as sugar and fats contain intermediate fat, alcohol, and unnecessarily large portions of food. (Nation Institute for Health and Welfare, 2012).

Table 1 Overweight and obesity among men and women aged 25-64, in the years of 2007 and 2012.

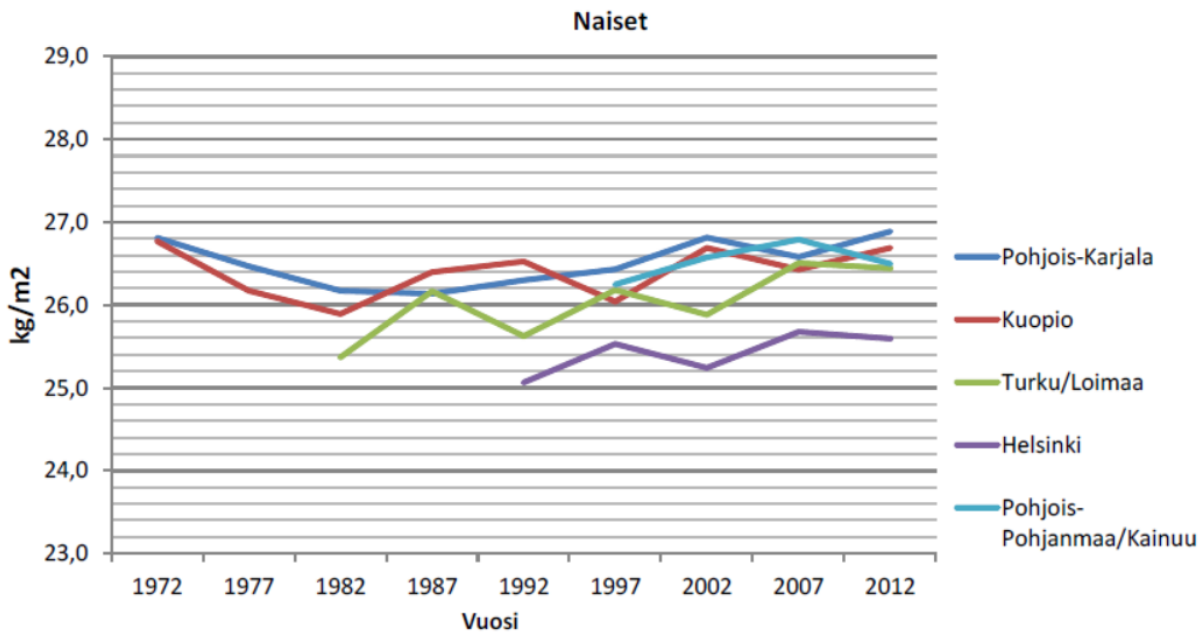
	FINRISKI 2007 25-64	FINRISK 2012 25-64	P-arvo
<b>Men</b>			
BMI, kg/m <sup>2</sup>	27, 0	27, 1	0, 42
≥25, %	65, 9	66, 3	0, 76
≥30, %	18, 8	20, 4	0, 17
Waist, cm	96, 5	96, 1	0, 29
>100 cm, %	31, 8	31, 0	0, 59
<b>Women</b>			
BMI, kg/m <sup>2</sup>	26, 3	26, 0	0, 07
≥25, %	49, 5	46, 4	0, 04
≥30, %	18, 3	19, 0	0, 51
Waist, cm	86, 6	85, 4	0,001
>100 cm, %	30, 9	29, 7	0, 38

(Finnish National Institute for Health and Welfare, 2012)

Figure 1 Body mass index, study area from 30 to 59 years of age from 1972 to 2012.



Finnish National Institute for Health and Welfare, 2012



Finnish Nation Institute for Health and Welfare, 2012

The BMI has changed for Finnish men (miehet) since the 1970s and for women (naiset) since the 1980s. However, progress has slowed down and even stabilized over the past decade (Figure 1). The FINRISK Survey from 2012 which outlined the health of men at a working age stated that 27, 1 kg/m<sup>2</sup> for men and 26.0 kg/m<sup>2</sup> for women. (Table1). Two out of three men (66%) and half of the women (46%) were overweight. One in five Finnish was fat. Obese bodies carry an average of more than 10 kg and 30 kg of excess fat load compared to normal weight. Abdominal obesity is particularly harmful to health as visceral fat is accumulated metabolically active. Waist obese men and women was 30%. Abdominal obesity is Prevalent during the period of 2002-2007. Over the past five years (vuosi), the development has stabilized. (National Institute for Health and Welfare, 2012)

## 7.1 Communication

Good communication skills are the key to successful for the team work and the well-being for the patient and her family. This involves:

- Change of population manners
- Change of strategy
- Change of language to adjust perceptions of problems and solutions



- recognition and support of people in need
- Professional training and enhanced encounters with patients
- Distribution and translation of successful programs. (Suggs, McIntyre & Cowdery, 2010)

The decision making in behaviour change and the importance of understanding the harm of overweight and obesity will contribute to healthy life. In addition, health care personnel have the extensive challenge of evaluating the patient's needs correctly, interpreting the level of need, and teaching patients about good nutritional practices. (Taylor et al, 2013)

## **7.2 Support**

Obesity prevention is focusing on behaviour change among children and the provision of information to adults. (Pender et al 2006) a strong public desire for obesity prevention that focuses on personal behaviour change, rather than policy. Providing specific information regarding the definition, prevalence and causes of obesity can further improve the public understanding and help establish effective prevention measures.

Supporting the obese person is important since the condition causes of morbidity and medical mortality, as well as impaired quality of life. Being a complex and multifactorial condition possibly resulting from the interaction between environmental factors, behavioural and genetic; obesity is difficult to treat and is associated with significant economic burden. Preventive measures have recently become a public health priority. (Pender et al 2006)

Even though obesity has played only a minor role in the development of strategies for health care in many countries, prevention of obesity is now increasingly part of public health initiatives support for prevention programs. On the other hand, support for individual behaviour change, through information about nutrition and physical activity in schools, and interventions on the environment, mainly in the microenvironment as the increased commercialization of healthy food in school canteens, has been strongly supported by the media, mass catering, the health care sector, legislation and government. (Pender et al 2006)

## **7.3 Education**

The National Institute for Health and Welfare, (2012) Stated that "*Children's overweight and obesity is a serious public health problem. This study showed that three-and five year-old boys 10% and girls 15%, but the school for more than fifth was overweight or obese. Children living in the*

*City of Turku, especially boys were less often overweight or obese than children in the region of Kainuu. Obesity was less common in babies born to mothers with higher education than mothers with less education and also among children in families where at least one of the parents was overweight or obese 40% of the mothers and fathers 60% had at least overweight. Obese mothers were 12% and fathers 14% were obese respectively. Parents' education was related to their own weight. Overweight was up to 65% among fathers and 45% among the mothers with not more than vocational education "(National Institute for Health and Welfare, 2012)*

We notice that food choices and physical activity has been observed in children according to the parent's education level. The children in toddlers and first grade with mother who has longer education seem to use more vegetables and drink skimmed milk. More educated mothers were understood much better the importance of full breast-feeding for their babies than less educated mothers. In Finland the outdoor activities and exercises are include in the program in most of the preschool-aged and first grade students. (National Institute for Health and Welfare, 2012)

#### **7.4 Motivation**

People who treat or counsel people with obesity must understand how the motivation significantly facilitates the treatment process. A lack of motivation leads to poor compliance which presents a rationale for the inclusion of motivation in weight control programs. The internal motivation to lose weight and self- motivation contribute for a good achievement of weight control. Successful interventions into lifestyle used a variety of behavioural methods to achieve its objectives, these included self-monitoring, modelling, and restructuring the environment, as well as group and individual support, often the motivation aspects is not explicitly mentioned. As the level of motivation is crucial to the changing of behaviours, this aspect should be stated more clearly. The loss of motivation can be a significant obstacle for weight loss. (Bates et al 2009)

Although these issues have not been studied systematically in current weight interventions, the examination motivational objectives and quality can confirm positive range of different periods in the process of weight management. It also enables the understanding of the personal meaning that a person attributes to participation in regular exercise, adoption of a new diet, or achieving a reduced body weight. Interventions are helpful in promoting vigorous weight control and can provide indirect evidence of the importance of autonomous motivation for successful behaviour change. (Bates et al 2009)

## **8. Ethical consideration**

When conducting a scientific study in nursing honesty and integrity are needed. The researcher must protect the rights of the participants, and there are many ethical principles to consider in this process. (Polit & Beck, 2012). In qualitative research, the researcher needs to pursue moral principles such as beneficence which refers to the minimizing of harm and producing benefits for members.

The members must be protected from exploitation to assure that the information they provide will not be used against them. Respect for human dignity refers to the right to self-determination by being able to control their own actions, their right to full disclosure and the right to volunteer their participation in the study. They are, finally, entitled to privacy. (Polit & Beck, 2012)

In this study, I have selected with awareness scientific articles corresponding with areas of the respondent topic are used like material. For that reason the ethical issue arose in the exploitation, understanding and quotation of these materials. Respondent make an effort to be carefully and honest as probable in relating and quoting texts to stay away from misunderstanding and mistreatment of materials.

According to Fry and Johnstone, (2008) "*The health of the people is really the foundation upon which all their happiness and all their power of state depend.*" As previously mentioned, prevention measures for overweight and obesity is costly for public health budgets and research programs. However the programs on obesity and overweight are susceptible to certain moral issues. Obese and overweight people may, unfortunately, be considered lazy, unattractive and unintelligent, which will lead to the stigmatization of the individual, and, consequently, the inefficiency of the programme. (Fry and Johnstone, 2008)

## **9. Critical review**

In the critical review of the study, I have chosen to use Larsson's (1994) criteria for the quality of qualitative studies. The criteria used are perspective consciousness, internal logic, and moral value.

## **9.1 Perspective consciousness**

According to Larsson (1994), the researcher's pre-understanding influences the study. As we learn more, our pre-understanding changes. The pre-understanding is what starts our passage of interpretation. The research must be attentive of his/her pre-understanding, as this awareness is a vital quality criterion. The pre-understanding can originate in lived experiences, literature review, but also the way we use the theory as a form of interpretation.

This study discusses overweight and obesity in Finland, and ways in which lifestyle changes can increase well-being in this context. My theoretical lens consisted of Pender's perspective on how motivation increases well-being and the potential actualization of human health. This is a wellness approach, and it manifests how a person perceives information and health, and what can influence their condition.

## **9.2 Internal logic**

The internal logic criteria can be described as a connection between the research question, the data collection, the analytical process and the choice of qualitative method. The research question is guided by the techniques of data collection and data analysis. A scientific study should be well-constructed through a closed system. At the end of study, the discussion should be connected to the problem statement and previous research. The contribution of the researcher, the study and the argument should make sense and be logically constructed. (Larsson, 1994)

My study ended up answering the question: Are the strategies adopted by WHO helping Finnish society to promote a number of overweight and obesity? Through my literature review. The gathered information was analyzed deductively.

## **9.3 Quality of results**

According to Larsson (1994), the richness of content is vital when doing qualitative work. This opulence is gained when the structure of the research the theory and the results merge are blends together. Richness is also gained when the researcher is able to illustrate phenomena as honestly and clearly as possible and to avoid tainting the results with their own pre-understandings. The structure should help bring out the essence of the study. The reader should be able to follow the structure without important steps missing; the research should show clear reasoning and a purpose. The procedure should be well-defined. (Larsson, 1994)

In my study, I have structured my data to give the reader the necessary pre- understanding of the information. Method for lifestyle changes and getting involved in physical activity are listed, defined, and quoted from the data. This source material will support the legitimacy of my writing.

## **10. Discussion and Conclusion**

My aim in this study was to discover the factors that cause overweight and investigate how one can achieve a change in lifestyle by improving. I wanted to know what kind of change in lifestyle can be beneficial for people who need to lose weight and how to involve people in increased physical activity.

An understanding of the importance of physical activity and long-term changes in dietary practices are the most necessary elements for people who need to lose weight this can be managed through effective communication with healthcare professionals, and those who provide specific weight management. The health care provider should understand the person's habits, recognize the individual need and aim at fulfilling it change her language to adjust the perception of problems and solution, and finally translate successful programs if needed. The health professionals must understand that working with obesity requires individual approaches every time.

Supporting the obese person is important, as a lifestyle change requires much effort. Health professionals will also help all family be involved in identifying changes that can be done at home to reduce obesity like eating healthy, Reducing TV time, playing computer games, and maintaining these changes long-term. Being obese or overweight has an important impact on the quality of life, and can affect a person's self-esteem, as they may be bullied or stigmatized. The right service, nevertheless, must be available to them when needed.

Education Is a factor in the prevalence of overweight and obesity people with longer schooling are less likely to smoke, drink, suffer from obesity or overweight, or use some kind of drugs. However, they are also more involved in programmes related to eating healthy and doing physical activity. People with lower levels of education tend to have increased health problems, as they may not be familiar with healthy food and the importance of physical activity.

According to Pender (2006), the strategies for maintaining one's recommended weight is a lifelong quest for reducing the multiple health problems that result from obesity. Overweight and obesity result from an imbalance in energy as a result of too many calories and not enough physical activity. Weigh management means balancing the number of calories consumed with the number of calories

burned. The prevention of overweight and obesity must involve homes, schools, worksites and the community all of them should work jointly to support healthy eating and physical activity.

Pender & al (2006), outline these strategies for maintaining a healthy weight:

*"Choose sensible portions of food lower in fat. Watch portion size. learn healthier ways to make favourite food, learn to recognize and control environmental cue that make you want to eat, have a healthy snack an hour before a social gathering, physical activity for 30min, take a walk instead of watching TV, do not eat a meal in front of TV, keep records of your food intake and physical activity. Weigh yourself weekly, pay attention to why you are eating."*

The rapid increase of overweight and obesity requires sound policies and measures. Healthy food-choices should be available at affordable prices, there should be safe places for physical activity, and weight management service must be available when needed. Prevention and treatment should be available to all persons, regardless of the socio-economic status, race or ethnicity.

According to Pender, the person needs motivation and this can be achieved by using a nurse-client contract to engage new health behaviour. This agreement can turn changes into daily or weekly habits and entail the purchase of necessary supplies and equipment. This contract should contain specific information needed to be follow about how the change will made, how the person or family will be helping out with the change, the time it will take and the consequences of meeting or not meeting the terms of the agreement. In this situation, the person will be concerned with carrying out realistic goals and the nurse is responsible for providing information, counselling, training and providing more helpful input, and feedback of adequacy related to the performance of the contract activities. (Pender et all 2006)

The support of the environment and the community is essential in determining people choices, making the easiest choices of food and physical activity accessible, available and affordable at the individual level. Each individual could limit the energy intake from total fats and sugars, increase the consumption of all vegetables and fruits and engage in habitual physical activity. 60 minutes of physical activity is required for children, and 150 minutes for adults. On a societal level institutions should support, motivate and educate the individual about weight recommendations; healthy food and regular physical movement should be available and affordable to all. (WHO, 2013)

*"The food industry can play a significant role in promoting healthy diets by:*

- *Reducing the fat, sugar and salt content of processed foods*
- *Ensuring that healthy and nutritious choices are available and affordable to all consumers*

- *Practicing responsible marketing especially those aimed at children and teenagers*
- *Ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace.* "( WHO, 2013)

There is a current suggestion that food should be taxed according to its fat content in an effort to curb obesity: tax on sugary carbonated soft drinks and all kind of sugar products in order to save lives and increase public health spending. People generally have the tendency to buy cheaper products if vegetables would be cheaper than chocolate, than maybe he/she would make better choices. High sugar intakes are linked to obesity, type 2 diabetes and cardiovascular disease. The new strategies for health care providers could be related to psychological and sociological efforts as well.

It can sometimes be difficult to attain even the most basic information concerning our product choices, and we must remember our rights as consumers. The industry should change the labelling of food products to better reflect their nutritional value and calorie content. The food industry has also increased the size of food portions, which affects consumption, as people tend to eat what is on the plate. Food advertisement in schools should ban also ban foods that are high in sugar, and reflect the nutritional values that have been put in place.

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<http://www.who.int/mediacentre/news/releases/2004/wha3/en/index.html> (retrieved 07.03.2013)

## Appendix 1

Author/year	Topic	Journal	Theme-related
De Campos (2012)	Health as a basic human need: Would be this enough	Journal of law, Medicine and Ethics	Description of health
Roos & al ,(2002)	Dietary interventions in Finland, Norway and Sweden: nutrition policies and strategies	Journal of Human Nutrition & Dietetics	describe the organization and implementation of nutrition policies
Barengo et al( 2006)	Twenty-five-year trends in lifestyle and socioeconomic characteristics in Eastern Finland	Scandinavian Journal of Public Health	lifestyle and socioeconomic characteristics
Rahkonen et al (2007)	Eating styles, overweight and obesity in young adult twins	European Journal of Clinical Nutrition	To explore the association of eating styles with overweight and obesity in young adults
Jallinoja et al (2007)	The dilemma of patient responsibility for lifestyle change: Perceptions among primary care physicians and nurses	Scandinavian Journal of Primary Health	Health promotion
Bates K., Burton S., Howlett E., & Huggins K.( 2009)	The Roles of Gender and Motivation as Moderators of the Effects of Calorie and Nutrient Information Provision on Away-	The journal of consumer affairs	Motivation for lifestyle change

	from-Home Foods		
Räihä et al (2012)	Effects of Nutrition Health Intervention on Pupils' Nutrition Knowledge and Eating Habits:	Scandinavian Journal of Educational Research	investigation of school meal
Laitinen et al (2004)	Predictors of abdominal obesity among 31y-old men and women in Northern Finland	European Journal of Clinical Nutrition	Problem of overweight and obesity
Rokholm et al (2011)	Increased Genetic variance of BMI with a higher prevalence of obesity	Plos One	Problem
Enwald et al (2011)	Human information behaviour and physiological measurements as a basis to tailor health information. An explorative study in physical activity among prediabetic individuals in Northern Finland	Health information and Libraries Journal	To explore through an interdisciplinary approach the potential to tailor health information on the basis of human information behaviour
Lallukka et al (2012)	Sociodemographic and socioeconomic differences in sleep duration and insomnia related symptoms in Finnish adults	Public Health	Problem
Suggs L. S , McIntyre	Overweight and obese	American Journal of	Exploration of sedentary overweight

C & Cowdery J. E.(2010)	sedentary adult's physical activity beliefs and preferences	Health Studies	and obese adult's communication practices and preferences related to physical activity.
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## Appendices 2

Mail Properties

From: Nola Pender <npender@umich.edu> Monday - January 20, 2014 4:14 PM  
To: Marie-Claire.Umwiza@novia.fi  
Subject: Re: Ask permission  
Attachments: [HEALTH PROMOTION MODEL WEBSITES.docx](#) (14 KB) [View](#)

Dear Marie:

You have my permission to use the Health Promotion Model and reprint it in your thesis. I understand that you will reprint it from the 6th edition of our book Health Promotion in Nursing Practice, Chapter 2, Page 45. Further, you may also use an electronic copy if needed as presented in the Deep Blue Web site. Please see the attachment for websites that may be helpful. I wish you success in completing your thesis and also success in your academic career.

Sincerely,  
Nola Pender

### HEALTH PROMOTION MODEL WEBSITES

If you need information about the research, research instruments, and writings of Dr. Nola Pender and colleagues related to the Health Promotion Model (HPM), please see the following website:

<http://deepblue.lib.umich.edu/browse?type=author&value=Pender%2C+Nola+J.+>

The above website also contains the Health Promotion Model Manual with a great deal of useful information about the HPM.

Further information about Dr. Pender's educational background and professional work, as well as, articles, presentations and awards can be found on the following website:

<http://nursing.umich.edu/faculty-staff/nola-j-pender>

Thank you for your interest in my work as well as that of my colleagues. We are pleased that you find the Health Promotion Model a useful tool in your efforts to promote the health and well-being of your patients as well as a meaningful framework for research in health promotion.

Wishing you good health,

Nola J. Pender, PhD, RN, FAAN  
Professor Emeritus  
University of Michigan School of Nursing  
Distinguished Professor  
Loyola University Chicago

## Appendices 3

Hi Marie-Claire,

We do not have much information (yet) on our newest survey (national FINRISK Study 2012) in English. You will please find attached a published short paper in Finnish – you will understand the table and figures.

You can find the trend articles et al. until the year 2007 from Pubmed (e.g., Lahti-Koski Marjaana et al.).

We have a National Obesity Programme coordinated by our institute. The booklet has a summary in English, page 11:

<http://www.julkari.fi/handle/10024/110503>

Best,  
Satu Männistö

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› Männistö Satu

26 jan ★

À Moi

Hi Marie,

Sure, according to normal academic referencing practices.

Best wishes,  
Satu

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