

KYMENLAAKSON AMMATTIKORKEAKOULU

Kymenlaakso University of Applied Sciences

Master's Degree in Health Promotion

PREVENTION AS A MODEL OF HEALTH PROMOTION OF KIDNEY FAILURE
IN COLLABORATION WITH THE NEPHROLOGY DEPARTMENTS AT
HELSINKI UNIVERSITY CENTRAL HOSPITAL, KOLMIO SAIRAALA WARD 6B

Isaac Odigbo

Master's Thesis

Spring 2013

ABSTRACT

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46 pages and 3 appendices

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Commissioned by

HUS, Meilahden Kolmio Sairaala, osasto 6B

May 2013

Keywords:

kidney injury, blood pressure, health professional, health promotion, patient, prevention, intervention, salt, dialysis, nephrology, cardiovascular disease

A number of factors are linked to the progression of kidney failure. Little research has been done on intervention as a means of reducing the progression. The aim of this study was to examine the prevalence, predisposing factors for kidney failure, its hazards as an ingredient of cardiovascular risk profile, and the implications of this information for early intervention, prevention and treatment.

A quantitative and qualitative action research guideline was used for this study. Questionnaires were sent to the study group, identifying risk factors of kidney failure (age, sex, smoking, body mass index, alcohol use, history of diabetes and blood pressure). Also, a structured descriptive review of books, journals, previous researched studies, with concepts such as intervention, health promotion, cardiovascular disease, blood pressure and kidney failure were used as reference.

According to the data analysis of this study, it can be seen that 76% of the population are at risk of kidney failure, this is a high number. Thus, people needed to be informed about awareness such as life style behavioural change and the preventable risks associated with kidney failure, such as, high blood pressure, diabetes, overweight, alcohol, age, smoking, and diet. Thereby; the progression of kidney failure can be reduced.

In conclusion, the continuing high incidence of kidney failure indicates a need for greater efforts at primary prevention. Health professionals must provide people with appropriate information in the form of teaching, therapeutic lifestyle changes, physical activities, and avoidance of alcohol, fat restriction, salt restriction and nutritional guidance which have shown to be beneficial to patients with kidney failure. Future study should highlight diabetes amongst others as key risk factors that leads to kidney failure.

TIIVISTELMÄ:

On olemassa useita tekijä jotka vaikuttavat munuaisten vajaatoiminnan etenemiseen. Kuitenkin hyvin vähän tutkimustyötä on kohdistettu munuaissairauksien ennaltaehkäisyä, jolla hidastetaan munuaisten vajaatoiminnan etenemistä. Tämän tutkimuksen tarkoituksena oli kuvailla millä keinolla voidaan vähentää munuaisten vajaatoiminnan esiintyvyyttä. Myös, panostetaan riskitekijöistä jotka johtavat munuaisten vajaatoimintaan.

Tämä tutkimus on tehty käyttäen kvantitatiivista ja kvalitatiivista tutkimusmenetelmää. Kyselylomake lähetettiin tutkimusryhmälle. Kerätty tieto oli statistiikka ja numeraalisia arvoja. Tehtiin myös strukturoitu deskriptiivinen katsaus kirjoihin, lehtin, aikaisempiin tutkimuksiin, lähteenä käytettiin käsitteet kuten interventio, terveyden edistaminen ja munuaisten vajaatoiminta.

Tämän tutkimuksen tulokset osoittivat, että aikasella interventiolla munuaisten vajaatoiminnan esiintyvyyttä voidaan vähentää. Myös, tekijöistä kuten tupakka, verenpaine, diabetes, ylipaino, alkoholi, ikä, lääkkeet ja ruokavalio ovat suurimman riskitekijöistä jotka johtavat munuaisten vajaatoimintaan. Myös, potilaat saavat tietoa munuaisten vajaatoiminnan riskitekijöistä.

Johtopäätöksenä, munuaisvaurion riskit ja oireet tunnistaminen, sekä ennaltaehkäisy on tärkeä menetelmä hoitaa munuaisvajaatoiminta. Terveysalan ammattilaisten tulee ohjata potilaita tiedolla, ohjauksella ja elämänmuutosta, joka on osoittautunut hyödylliseksi munuaisvaurion estämisessä. Tulevissa tutkimuksissa tulisi korostaa diabetesta erityisenä riskinä munuaisten vajaatoiminnalle.

Avainsanat: munuaisten vajaatoiminta, verenpaine, terveysalan ammattilainen, terveyden edistäminen, potilas, ennaltaehkäisy, interventio, suola, dialyysi, nefrologi

ACKNOWLEDGEMENT

I would like to use this medium to thank the staffs of the Nephrology department at Meilahti Kolmio Sairaala, especially ward 6B for the permission to use your ward as collaboration with my project. Thank you for the knowledge and exchange of ideas during this period of my project. Thank you to Sanna-Mari Nieminen and Meri Kujanpää for the translation of the project abstract to Finnish language. I also want to thank my project commissioner as in person of Dr. Eero Honkanen, the chief nephrologists at Helsinki University Central Hospital, Meilahti Kolmio Sairaala, ward 6B, for your personal commitment, advice and instructional information about kidney failure. Thanks to the staffs at terveystyskeskus ("health stop") under the surveillance of Helsinki municipal health center, in the eastern part of Helsinki city for allowing the use of their clients as sample group for my project. Thanks to Dr. Sari Aaltonen, the ward doctor at Helsinki University Central Hospital, Meilahti Kolmio Sairaala, ward 6B, for your lectures about kidney failure. Thank you to my lecturers at Kymenlaakson University of Applied Sciences, in persons of Marja-Leena Kauronen and Seija Aalto for your personal encouragement on the development of my project.

The completion of this research would not be possible, if not for the support of my wife, Tatjana, who encouraged me and believed in me. Thank you my dear, for your assistance and knowledge in introduction technology, with excel and designing. Thanks to my family members who in one way or the other contributed to the success of my study, through prayers and encouragement. Finally, I would like to thank my son, Gabriel, for your patience and understanding, that daddy needs his quiet time, and need not be bothered when he is writing and studying, thank you for your cooperation, love and understanding. This work is dedicated to the memory of my late mother, Mrs Patricia Obaiti Odigbo.

Helsinki, spring 2013

Isaac Odigbo

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1. INTRODUCTION

The kidneys are a pair of small (about the size of a fist) bean-shaped organs that lie on either side of the spine at just below the lowest ribs. They filter toxins from the blood and excrete them as urine. The kidneys preserve the balance of body fluids and salts. Kidneys help to regulate blood pressure and secrete hormones that contribute to red blood production. (Vauhkonen et al. 2005)

Seppo Ojanen stated in his article: *Prevention is the best treatment for kidney failure. Risks of kidney failure are to be diagnosed early, so that its progress can be slowed down with medication as well as lifestyle and nutritional guidance.* (Ojanen, S. 2010)

Dialysis (kidney failure treatment) in the hospital costs the Finnish local government approximately 60 000 euros per patient per year. The risk of kidney failure increases as the aging population grow older. 28% of the present number of patients that needs kidney failure treatment is above 75 years old. About 450 new cases of kidney failure are registered per year (The Finnish Kidney and Liver Association 2013).

According to Mustonen (2005) kidney failure may be temporary, but it can also become permanent. Permanent kidney failure is more common in older patients. It is very important to understand and to predict how the populations' changes will affect the numbers of patient that are on dialysis and also patients who have undergone kidney transplantation, so that hospitals and nursing units can allocate and plan their resources accordingly (Mustonen 2005).

It was reported that the incidence of kidney failure increased steadily until 1999, after which the incidence has remained at about 95 new patients per million inhabitants. This offers great challenges in terms of how future acute kidney patients should be monitored and treated (The Finnish Registry for Kidney Disease 2008).

According to KELA (2011) 508 591 patients diagnosed with high blood pressure received drug compensation in 2009 (KELA 2011.) The most common cardiovascular diseases are high blood pressure, one of the causes of kidney failure. Severe kidney failure can lead to life threatening if left untreated (Holmström 2005, 7 - 194.)

Preliminary research indicates that within the past five years, blood pressure and salt intake have increased among the Finnish population. Every other 30 years old male Finn and 2 out of 5 female Finn has high blood pressure (FINRISK 2012).

Obesity and high blood pressure is usually associated with life-style. Obesity predisposes the development of diabetes and high blood pressure. Untreated high blood pressure and poor balance of diabetes can lead to kidney damage. (Fahey et al. 2004)

The aim of this study is to examine the prevalence, predisposing factors for kidney failure, and its hazards as an ingredient of cardiovascular risk profile, and the implications of this information for early intervention, prevention and treatment.

Since there are number of factors that linked to the progression of kidney failure, therefore, identifying the risks and symptoms, as well as knowing the main preventable behaviours that can be taken in reducing the progression of kidney failure leads me to the following research questions:

1. What are the risks factors and symptoms associated with kidney failure?
2. What is the association of blood pressure on kidney failure?
3. What are the preventable behaviours in reducing the progression of kidney failure?
4. What role does intervention play as a means of reducing the progression of kidney failure?

2. THEORETICAL FRAMEWORK

Transtheoretical model was used for this study. The model provides a plan for investigating and addressing phenomenon's such as the risks factors that contributes to kidney failure. Such as high blood pressure, ageing, non-steroidal anti-inflammatory drugs, diabetes, overweight, smoking, alcohol, and diet. The model is based on primary prevention, using a basic action research model. The goal of primary prevention is to avert human suffering and to control the tremendous economic costs of ill health (Prochaska et al. 1983).

Maglacas' definition of primary prevention: *primary prevention is to protect healthy people from developing a disease or experiencing an injury in the first place.* He continues to define prevention as solving a problem at the source instead of solving a problem one by one after it has already happened. Examples of primary prevention include:

- * Education about good nutrition, the importance of regular exercise, and the dangers of tobacco, alcohol and other drugs
- * Regular exams and screening tests to monitor risk factors for illness
- * Immunization against infectious diseases. (Maglacas 1988)

2.1 HIGH BLOOD PRESSURE- a growing public health problem

High blood pressure is defined by the National Heart, Lung, and Blood Institute (NHLBI) as “a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems” (NHLBI 2004). NHLB continues to define blood pressure as the force of blood pushing against the walls of the arteries as the heart pumps blood. If this pressure rises and stays high over time, it can damage the body in many ways (NHLBI 2004.)

According to Tiikanen et al. (2013) high blood pressure tends to rise with age. Following a healthy lifestyle, reducing salt intake, quit smoking and being active can help some people delay or prevent this rise in blood pressure. High blood pressure is defined as 130/80 mmHg for patients diagnosed with diabetes or kidney failure (Tiikanen et al. 2013).

Suomalainen Lääkäriseura Duodecim (2013) stated that in Finland about half of 35-64 years old male and every other third female have high blood pressure, but just half of them know about it. According to KELA (2011) 508 591 patients diagnosed with high blood pressure received drug compensation in 2009. (KELA 2011)

The report issued by the Centres for Disease Control and Prevention (CDC) 2012, states that high blood pressure is a leading global health problem, which increases as the population ages. About 70 million adults in the United States of America are affected by high blood pressure. And over half of these Americans do not have their high blood pressure under control. (Centres for Disease Control and Prevention 2012)

According to National Heart, Lung, and Blood Institute (NHLBI), high blood pressure increases the risk for getting kidney disease, heart diseases and for having stroke, the first and the third leading causes of death for Americans. It is especially dangerous because it often has no warning signs or symptoms. It is estimated that one in every four American adults has high blood pressure. High blood pressure is dangerous because it makes the heart work too hard and contributes to atherosclerosis (the hardening of the arteries). Once high blood pressure develops, it usually lasts a lifetime. (NHLBI 2004)

2.2 RISK FACTORS ASSOCIATED WITH HIGH BLOOD PRESSURE

According to Fahey et al. (2004), high blood pressure is one of the most prevalent and powerful contributors to cardiovascular morbidity and mortality. The main risks are stroke, coronary disease and atherosclerosis. The risk is based on the amount of diastolic blood pressure or systolic blood pressure rise at any age, in both male and female. (Fahey et al. 2004)

There are many factors that lead to the risk of developing high blood pressure, according to Holmström (2005) the risk of cardiovascular diseases in general, and of coronary heart diseases in particular are concentrated in patients diagnosed with high blood pressure. These risks are categorised as high density lipoprotein (HDL), cholesterol ratio, abnormalities in electrocardiographic (ECG), impaired glucose level, and cigarette smoking (Holmström, 2005).

In Framingham's study, prevalence rates of high blood pressure shows an increase in age specific rates from the late 1950s to the early 1980s when patients receiving antihypertensive medications are included, irrespective of their blood pressures. (The Framingham study, American Heart Journal 1985)

According to National Heart, Lung, and Blood Institute (NHLBI), the kidney act as filters to rid the body of wastes. Over time, high blood pressure can narrow and thicken the blood vessels of the kidneys. The kidneys filter less fluid and waste builds up in the blood. The kidney may fail altogether. When this happens, medical treatment such as dialysis or kidney transplant may be needed. (NHLBI, 2004)

Heart Attack

High blood pressure is a major risk of heart attack. The arteries bring oxygen-carrying blood to the heart muscle. If the heart cannot get enough oxygen, chest pain, also known as “angina”, can occur. If the flow of blood is blocked, a heart attack results. (NHLBI, 2004)

Arteries

As people get older, arteries throughout the body “harden”, especially those in the heart, brain, and kidneys. High blood pressure is associated with this “stiffer” arteries. This, in turn, causes the heart and kidneys to work harder. (Fahey et al. 2004)

Stroke

High blood pressure is the most important risk factor for stroke. Very high pressure can cause a break in a weakened blood vessel, which then bleeds in the brain. This can cause a stroke. If a blood clot blocks one of the narrowed arteries, it can also cause a stroke. (Holmstöm, 2005)

Impaired vision

High blood pressure can eventually cause blood vessels in the eye to burst or bleed. Vision may become blurred or otherwise impaired and can result in blindness. (NHLBI, 2004)

Kidney damage

The kidney act as filters to rid the body of wastes. Over time, high blood pressure can narrow and thicken the blood vessels of the kidneys. The kidneys filter less fluid and waste builds up in the blood. The kidney may fail altogether. When this happens, medical treatment such as dialysis or kidney transplant may be needed. (NHLBI, 2004)

2.3 ADOPTING A HEALTHY LIFE STYLE AS PREVENTIVE METHOD

According to National Heart, Lung, and Blood Institute (NHLBI), one can take steps to prevent kidney failure by adopting a healthy lifestyle. These steps includes maintaining a healthy weight, being physically active, following a healthy eating plan, which emphasizes fruits, vegetables and low fat dairy foods; choosing and preparing foods with less salt.

Healthy eating plan

Research has shown that following a healthy eating plan can both reduce the risk of developing high blood pressure and lowering an already elevated blood pressure that in turn leads to kidney failure. According to Dietary Approaches to Stop Hypertension, (DASH) a clinical study that tested the effects of nutrients in food on blood pressure. The study results indicated that elevated blood pressures were reduced by an eating plan that emphasizes fruits, vegetables and low fat dairy foods, and is low in saturated fat, total fat, and cholesterol. The DASH eating plan includes whole grains, poultry, fish and nuts, and has reduced amount of fats, red meats, sweets and sugared beverages. (NHLBI, 2004)

Another clinical study, called “DASH-Sodium” looked at the effect of reduced dietary sodium intake on blood pressure as people followed either the DASH eating plan or a typical American diet. Results of the study showed that reducing sodium lowered blood pressure for both the DASH eating plan and the typical American diet. (NHLBI, 2004)

Reducing salt and sodium in diet

According to Davies et al (2005), a key to healthy eating is choosing foods lower in salt and sodium. The current recommendation is to consume 6 grams (about 1 tea spoon) of table salt a day. The 6 grams includes all salt and sodium consumed, including that used in cooking and at the table. These lower sodium diets keep blood pressure from rising and helps blood pressure medicines works better. Davies et al (2005)

Maintaining a healthy weight

Being overweight increases the risk of developing high blood pressure which is a key factor in acquiring kidney failure. Holmström (2005) in his book indicated that blood pressure rises as body weight increases. Losing weight can lower blood pressure, and has the greatest effect for those who are overweight and already have high blood pressure. Holmström continues to state that, being overweight or obese are also risk factors for cardiovascular diseases. Being overweight increases the chance of developing high blood cholesterol and diabetes, again, the two major risk factors for cardiovascular disease. (Holmström, 2005)

Physical activity

Davies (2005) indicated that being physically active is one of the most important steps taken to prevent or control high blood pressure, a major risk factor that contributes to kidney failure. Physical activity also helps to reduce other risks associated to cardiovascular diseases. (Davies et al. 2005)

Limit alcohol consumption

Drinking too much alcohol can raise blood pressure. It can also harm the liver, brain and heart. Alcoholic drinks contain calories, which matters when trying to lose weight. (WHO, 1990)

Quit smoking

Smoking injures blood vessels walls and speeds up the process of hardening of the arteries, which further leads to rise in blood pressure, causing kidney failure. Smoking is bad for anyone, especially those with high blood pressure. The advantages of not smoking includes the following: it will reduce chances of having a heart attack or stroke. It will reduce chances of getting lung cancer, emphysema and other lung diseases. (WHO, 1990)

2.4 THE ASSOCIATION OF CARDIOVASCULAR DISEASES WITH KIDNEY FAILURE

According to Greene et al (2003), in their article published in American Journal Kidney Disease, they describe the association of cardiovascular diseases with kidney failure can be summarized as follow; cardiovascular complications are the leading cause of mortality in patients with end-stage renal disease (ESRD), also known as kidney failure. The risk factor for cardiovascular disease includes hypertension, glucose intolerance, lipid abnormalities, and the disorders of the heart, such as sudden death, heart failure and myocardial ischemia; and the disorder of the vascular system (atherosclerosis). These risks are present more frequently in patients with kidney failure than the general population. (Greene et al, 2003)

Kidney Failure/Cardiovascular Disease Connection

According to Tremblay (2008), kidney failure and cardiovascular disease share two major risk factors, namely; diabetes and high blood pressure. Both can damage the blood vessels in the kidney, preventing it from properly eliminating fluid from the body. Excess fluid contributes to higher blood pressure, which leads to more blood vessel damage, causing a continuous cycle of damage. (Tremblay, L. 2008).

Holmström (2005), describes that kidney failure patients are also prone to anemia, this is lowering of the blood's red cell count. Prolonged anemia can cause the heart to develop a left ventricular hypertrophy, which means the muscle on the left side of the heart becomes abnormally thick, leading to congestive heart failure. (Holmström, 2005).

2.5 THE ASSOCIATION OF DIABETES/OBESITY WITH KIDNEY FAILURE

According to study by Ferrannini and DeFronzo for the American Diabetes Association (1991), it can be seen that diabetes mellitus is commonly associated with systolic/diastolic blood pressure, and that numerous epidemiological data suggest that this association is independent of age and obesity. Ferrannini et al. continue to suggest that much evidence indicates that the link between diabetes and essential blood pressure is *hyperinsulinemia*. This means that when hypertensive patients, whether obese or of normal body weight, are compared with age and weight; a heightened plasma insulin response to glucose challenge is consistently found. This in turn relates and leads to kidney failure with patients of high blood pressure. (Ferrannini et al. 1991)

In a study done by Diabeteksen ehkäisy ja hoidon kehittämissuunnitelma, DEHKO (2010), it was demonstrated that the insulin resistance of essential blood pressure is located in muscle, it is limited to nonoxidative pathways of glycogen synthesis, and correlates directly with the severity of high blood pressure, leading to kidney failure. DEHKO stated, that physiological maneuvers, such as calorie restriction in overweight patients and regular physical exercise, can improve tissue sensitivity to insulin, that evidence indicates these maneuvers can also lower high blood pressure in both normotensive and hypertensive individuals. (DEHKO 2010)

Mustonen (2005) illustrated that insulin, independent its effects on blood pressure and plasma lipids, is known to be *atherogenic*. Hormone enhances cholesterol transport into arteriolar smooth muscle cells and increases endogenous lipid synthesis by these cells. Insulin dependent diabetes appears to be a syndrome that is associated with a clustering of metabolic disorders, including non-insulin-dependent diabetes, obesity, high blood pressure, lipid abnormalities and atherosclerotic cardiovascular diseases. (Mustonen 2005)

3. LITERATURE REVIEW

3.1 HEALTH PROMOTION AND CURRENT TRENDS

According to World Health Organization (1986) health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviors towards a wide range of social and environmental interventions. It aims to address the underlying determinants of population risks; promote multi-sectorial policies and programs to improve health and reduce health inequalities; and support development of evidence-base for interventions. (World Health Organization. 1986)

Health care educationists have different views and definition of health promotion. The Longman dictionary defines health promotion as means of making one's live better (The Longman Dictionary of English Language and Culture 1992). The Finnish Heart Association defines health promotion as a means of prolonging lives of cardiovascular patients (The Finnish Heart Association). Educationist define health promotion as an education gateways whereby people are informed about the risk of a given disease or illness. (Pender 1996)

3.2 EMPOWERMENT

Empowerment is a difficult concept to define. Liisa Kuokkanen and Leino Kilpi, 2008, defines empowerment as a social process of recognizing, promoting and enhancing people`s abilities to meet their own needs, solve their own problems and mobilize the necessary resources in other to feel in control of their own lives. (Kuokkanen et al. 2008)

According to Davies (2005) health promotion theory applies when a patient is diagnosed with a disease empowering them to be able to take care of themselves becomes a collaborative effort of health care provider and the patient. The health care provider and the patient together start to focus on the solution to the problem. It is a long process before the patient becomes empowered which can be called the process of becoming. This process can be divided into four stages. Firstly, the era of entry; this would be when the patient know very little and contributes very little to their care. Second era of development, the patient is actively learning a lot about their condition and is able to take some responsibility of his own actions. In the third era of incorporation, the patient has somehow mastered the skills they need to survive. Finally in the era of commitment, the patient has been taught the skills and has most of the knowledge he or she requires to be able to face every day and make informed decisions of his or her own care. (Davies et al. 2005)

3.3 LIFE STYLE BEHAVIOUR CHANGE

According to Diet, nutrition, and the prevention of chronic diseases, changes in lifestyle of patients that are diagnosed with kidney failure and those that at risk of kidney failure should consider a new approach towards nutrition and physical activity. A program of changing lifestyle should be based on self-control. Risk factors treatment strategies include certain limitations, such as meals in some places and hours, avoiding a challenging environment related to unhealthy nutrition and sedentary life (such as vacations, food outside home, travels), encouragement in an active participation in physical exercise, dealing with stress with relaxing techniques and daily physical activity. Changing lifestyle consists in adopting proper dietary habits and in increasing physical activity aiming at the ideal body weight maintenance. (WHO: Diet, nutrition, and the prevention of chronic diseases. 1990.)

3.4 MODELS OF HEALTH PROMOTION

Maggie Davies and Wendy MacDowall in their book “Health Promotion Theory” defined Health promotion as the process of enabling people to increase control over the determinants of health and thereby improve their health. They defined Health as the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. They also defined Models as Simplified versions of something complex used to analyse and solve problems or make predictions. They defined Public health as the science and art of promoting health, preventing disease and prolonging life through the organized effects of society. (Davies et al. 2005).

3.5 THE IMPORTANCE OF MODELS IN HEALTH PROMOTION

Diclemente (1983) highlights the importance of model in their book, stages of change model. We need Models to analyse and solve problems that arise in our everyday life or make predictions about the future of health education in our society. We benefit from models through the foundation of our knowledge. The knowledge we have about health and promotion comes from the basis that our education is evidenced based, and it is scientifically proven that our knowledge about a chosen topic can be trusted and can be used for future research studies. (Diclemente et al. 1983)

Davies describes Model is a tool, a process of carrying out a particular task in a manner that can be emulated by others to reach a comprehensive solution. In other words, model is a way of live by which society lives according to an agreed norms and regulation. Elements of model, depends on the type of model chosen in health promotion. It consists of theory, focus group, key concepts and it can be subdivided into individual level, interpersonal level or community level. (Davies et al. 2005)

According to Tannahill, the relationship between the elements varies, depending on the model chosen. In health belief model, the relationship is between an individual who has a health problem and a health provider who is trying to provide a suitable solution to the problem by implementing a behaviour change of the client. Mostly, models emphasise mainly on the client than the professional. (Tannahill et al. 1996)

According to Downie, Fyfe & Tannahill; 1996 “Health promotion comprises efforts to enhance positive health and prevent ill-health, through the overlapping spheres of health education, prevention, and health protection”. (Tannahill et al. 1996)

4. DEFINING CONCEPTS

4.1 KIDNEY FAILURE: *Definition, Types, Symptoms, Risks, Causes and Treatment*

Vauhkonen (2005) describes that there are two kidneys inside the human body. The kidneys are responsible for removing excess fluid, minerals and wastes from the body as urine. They balance chemicals in our system and make hormones that keep the bones strong and the blood healthy.

According to Holmström (2005) kidney failure is the loss of kidney function. The kidney filters wastes and excess fluid from the blood, which are then excreted in urine. When kidney failure happens, dangerous levels of fluid, electrolytes and wastes are accumulated in the body. As kidney damage develops, blood pressure also often rises or hypertension may attenuate the process of renal injury.

Kidney failures can be categorized into acute kidney failure and chronic kidney failure. Acute kidney injury is when kidneys suddenly become unable to filter waste from the blood. It develops rapidly over a few hours or days. While chronic kidney injury is characterized by an irreversible of renal function that gradually progresses to an end-stage renal disease. (Vauhkonen et al. 2005)

Symptoms of kidney failure develop according to the nature of the injury, be it acute or chronic. When kidneys stop working, one may have the following symptoms, such as problems with anemia (anemia is a condition in which the amount of red blood cells is low). Red blood cells carry oxygen to cells throughout the body. Without oxygen, cells cannot use the energy from food. Some of the more common conditions caused by kidney failure are tiredness, joint problems, itching, and "restless legs." Restless legs keeps patients awake as patients feel them twitching and jumping. Other symptoms may include nausea, vomiting, loss of appetite, changes in urine output, swelling of the feet and ankles, chest pain if fluid accumulates around the lining of the heart, shortness of breath if fluid accumulates in the lungs and high blood pressure. (Holmström et al. 2005)

The common risk factors of kidney failure are high blood pressure, diabetes, heart disease, obesity, high cholesterol level, smoking, excess alcohol consumption, family history of high blood pressure, use of nonsteroidal anti-inflammatory drugs (NSAID) such as DISPERIN and ASPIRIN, history of urinary tract infection. Kidney failure occurs when a disease or condition impairs kidney function, causing kidney damage to worsen over period of time. Diseases and conditions that commonly cause kidney failure include high blood pressure, diabetes, and prolonged obstruction of the urinary tract from conditions such as enlarged prostate, kidney stones or cancers. Other causes may be vesicoureteral reflux (a condition that causes urine to back up into the kidney) and recurrent kidney infection. (Vauhkonen et al.2005).

Holmström (2005) explains that treatment of kidney failure depends partly on the cause and extent of the failure. The patient should be referred to a kidney specialist (nephrologist) for care. The first goal is to pinpoint the exact cause of the kidney failure, as that will partly dictate the treatment. Secondly, the degree to which accumulating wastes and water are affecting the body will impact treatment decisions about medications and the need for dialysis. (Holmström et al. 2005)

Vauhkonen and Holmström demonstrate that when kidney failure is diagnosed, treatment is needed to replace the work of the failed kidneys. These treatments are drug therapy, peritoneal dialysis (PD) and hemodialysis (HD), until the patient or before the patient gets a kidney transplant. In peritoneal dialysis, a soft tube called a catheter is used to fill the abdomen with a cleansing liquid called dialysis solution. The walls of the abdominal cavity are lined with a membrane called the peritoneum, which allows waste products and extra fluid to pass from blood into the dialysis solution. The solution contains a sugar called dextrose that will pull wastes and extra fluid into the abdominal cavity. These wastes and fluid then leave the body when the dialysis solution is drained. The used solution, containing wastes and extra fluid, is then thrown away. The process of draining and filling takes about 30 to 40 minutes. A typical schedule calls for four exchanges a day. One form of PD, continuous ambulatory peritoneal dialysis (CAPD), doesn't require a machine. As the word ambulatory suggests, patient can walk around with the dialysis solution in their abdomen. Another form of PD, continuous cycler-assisted peritoneal dialysis (CCPD), requires a machine called a cycler to fill and drain the abdomen, usually while patient is sleeping. CCPD is also sometimes called automated peritoneal dialysis (APD). The type of PD that a patient chooses will depend on the schedule of exchanges the patient would like to follow, as well as other factors. (Vauhkonen et al. 2005)

According to Holmström, with hemodialysis, the patient is connected to a machine through a catheter that is surgically implanted (through the skin) between a large artery and veins into the peritoneal cavity. The blood is allowed to flow, a few ounces at a time, through a special filter that removes wastes and extra fluids. The clean blood is then returned to the body. Removing the harmful wastes and extra salt and fluids helps control the blood pressure and keep the proper balance of chemicals like potassium and sodium in the body. Patients go to a clinic, a dialysis center-three times a week for 3 to 5 or more hours each visit. For example, Monday-Wednesday-Friday schedule or a Tuesday-Thursday-Saturday schedule. It may be morning, afternoon, or evening shift, depending on availability and capacity at the dialysis unit. (Holmström et al. 2005)

Other means by which a patient with failed kidney can get its waste toxins out of the body is through kidney transplantation. Kidney transplantation is not a cure.

Kidney transplantation is a procedure that places a healthy kidney from another person into the body of an acute injury patient. The new kidney takes over the work of the failed two kidneys. A surgeon places the new kidney inside the patients' lower abdomen and connects the artery and vein of the new kidney to the artery and vein of the receiver. The receivers' blood flows through the new kidney, which makes urine, just like the failed kidneys did when they were healthy. Unless they are causing infection or high blood pressure, the receivers own kidneys are left in place. Transplantation is an ongoing treatment that requires patients to take medicines for the rest of their lives. The wait for a donated kidney can be years long. A successful transplant takes a coordinated effort of the whole health care team, which includes nephrologist, transplant surgeon, transplant coordinator, pharmacist, dietitian, and social worker. (Vauhkonen et al. 2005)

4.2 BLOOD PRESSURE: *Definition, Types, Symptoms, Risks, Causes and Treatment*

Thomas (2002) defines blood pressure as a dynamic, multidimensional, cardiovascular indicator of a person's state rather than a one-dimensional static measurement.

Thomas et.al 2002, define blood pressure as the force of blood against the walls of arteries. It is recorded as two numbers: the SYSTOLIC pressure, as the heart beats, over the DIASTOLIC pressure, as the heart relaxes between beats. (Thomas et al. 2002).

According to Fahey (2004) high blood pressure is not an illness or disease; rather it is a risk marker for illnesses that one wishes to avoid. These illnesses include stroke, heart attacks, kidney problems and other problems affecting the circulatory system (blood circulation). High blood pressure is a common and important modifiable risk factor for cardiovascular and kidney diseases. The prevalence of hypertension, particularly isolated systolic hypertension, increases with advancing age. (Fahey et al. 2004)

There are two types of high blood pressure; namely: Primary high blood pressure which occurs in about 90 to 95 percent of cases. No specific cause is known for this condition and the other is Secondary high blood pressure, in which the cause of it is known. This type of high blood pressure is secondary to another disease, and hypertension usually disappears once the underlying conditions is controlled or cure (Pickering 1988).

High blood pressure is largely a symptomless condition, but some traits are related to the symptoms of high blood pressure, such as blood spot in the eye, facial flushing, blurred vision and dizziness. The risk of high blood pressure increases as one age. Through early middle age, high blood pressure is more common in men. Women are more likely to develop high blood pressure after menopause. High blood pressure tends to run in families. Overweight, the more one weight, the more blood one need to supply oxygen and nutrients to the tissues. Not being physically active. Smoking raises blood pressure temporarily. Too much salt in one's diet causes the body to retain fluid, which increases blood pressure. Too much alcohol consumption can raise the blood pressure. Certain chronic conditions also increase the risk of high blood pressure, including high cholesterol, diabetes, sleep apnea and kidney disease. Sometimes pregnancy contributes to high blood pressure, as well. (Pickering 1988)

Fahey (2004) describes that, there is still a lot of uncertainty about the causes of high blood pressure. For the vast majority of people, over 95%, an underlying cause is not found. It is likely that several factors contribute to high blood pressure in most people. The chief suspects include genetic factors and lifestyle habits. Genetic factors include family history, age, body shape; Lifestyle and habits include drinking, smoking, exercise rate, stress, obesity, and high-salt intake. (Fahey et al. 2004)

The best treatments of high blood pressure without resorting to drugs are to change one's lifestyle, altering ones diet, doing exercise and stop smoking will lower the many risks that can cause high blood pressure or that can increase cardiovascular risk level. Statistics shows that increasing exercise, losing weight, lowering alcohol consumption and changing diet (reducing salt intake and increasing fruit and vegetable intake) will result in a reduction of about 4 mmHg systolic blood pressure on average if one stick to these changes. (Fahey et al 2004.)

5. METHODOLOGIES

5.1 RESEARCH METHOD AND IMPLICATIONS

A structured descriptive quantitative and qualitative action research guideline was used to carry out this study. Burns (2005) defines quantitative as a means to test hypothesis, look at cause and effect and make predictions, while qualitative means to understand and interpret social interactions. (Burns et al. 2005)

In recent years it has been debated about the importance of using both quantitative and qualitative as a research method. Bryman in 2008 argued for a "both of both worlds" approach and suggested that quantitative and qualitative approaches should be combined. (Bryman 2008)

Through quantitative method, the objective of this study was carried out. This study actively introduces intervention as a method of treatment for kidney failure. During this study, steps were taken accordingly, moving from beginning point (the posing of a question) to the end point (the obtaining of an answer) in a linear sequence of steps. Quantitative research method enables the use of closed-ended questionnaires that allows for the objective feedback of the respondents (Gerrish et al. 2006, 155-163).

The studied group was large and randomly selected. Questionnaires were sent to the study group, identifying risks of kidney failure. A specific variable was studied, as in risk of kidney failure. Types of data collected were numbers and statistics. The forms of data collected were based on precise measurements using structured and validated data-collection instruments. The empirical phase, which is the collection of research data (questionnaire) and preparing the data for analysis, describes the quantitative nature of this study. The results are generalized findings that can be applied to the population. The final report is statistical with correlations, comparisons of means and statistical significance of findings. The behaviour, complexities, scales and trends were observed in the sample group.

Through qualitative method, background theory and previous knowledge in the field was used to support this study. A structured descriptive review of books, journals, previous researched studies, prevalence, epidemiology and statistics of kidney failure in Finland with concepts such as intervention, health promotion, and kidney failure were used as reference.

Reviewing literature on a clinical topic involves the identification, selection, critical analysis and writing description of existing information (Polit et al. 2004). Systematic review as a method of analysis is the most reliable and valid means of summarizing previous scientific knowledge (Kääriäinen et al. 2006).

5.2 DATA COLLECTION DESIGN

Data for this study was gathered through questionnaires. Questionnaires were deposited at terveystasakki (“health stop”), a local place where people can go and measure their blood pressure free of charge under the surveillance of Helsinki municipal health center, in the eastern part of Helsinki city, during 18.02.13 – 27.02.13. It was agreed upon that when people come to measure their blood pressure; they can answer the questionnaire voluntarily, and return the answered questionnaire back to me in a sealed self-addressed envelope to ensure privacy, and for quick and high rate of response.

The demographic, medical, and socioeconomic information of the participants in this study group were not known before-hand. The questionnaires were made in two languages, English and Finnish language respectively. The questionnaire identifies the risks of kidney failure. Questionnaires were made up of 10 closed-ended questions with specific response categories rather than open-ended questions that allow respondents to write in their answers. The original questionnaire can be seen on appendix 1/1 for Finnish language and Appendix 1/2 for English language. Data was collected concerning many variables through the questionnaire. The variables were dependent on the risks of kidney failure.

There are several advantages of using a questionnaire over other forms of surveys. They are cheap, they do not require as much effort in gathering responses as does a verbal or telephone survey, and they often have standardized answers that make it easy to compile answers. The respondents can take their own time to answer the questions. There are also disadvantages to using a questionnaire. For instance, limiting a respondent's answer choices may frustrate the respondent. Also, questionnaires require that the respondents are able to read the questions and respond to them, which could limit the demographic groups to which the questionnaire is distributed.

The ethical consideration of this study is that the researcher and the researchers biases are not known to participants in the study, and the participant characteristics are deliberately hidden from the researcher.

The validity of this study is that data is collected from numerous sources, according to Yin 2003, the collection of data by numerous sources will help to raise the soundness of a thesis. (Yin 2003)

5.3 DATA ANALYSIS

Data analysis is a process of inspecting, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggesting conclusions, supporting decision making and to generalize research findings (Saunders et al. 2007). The main aim of data analysis is to examine the figures and facts, to enlarge the test hypothesis and explanations of the involved people (Smith et al. 2009).

The collected data of this study were analyzed quantitatively using Microsoft excel to describe, measure, predict statistics and comparisons; using graphs and tables. The dependent variables of this sample group are gender and age group, while the independent variables of this sample group are the noticeable risks of kidney failure. 100 questionnaires were sent out in a closed, self-addressed envelope, to evaluate the risk of kidney failure on individuals who presumably believes and thinks they are “healthy” and would not regard themselves as candidates of kidney failure.

Everything is known before conclusion can be drawn. Out of the 100 questionnaire sent out, 13% were not returned nor answered. The number of population, in which data is analysed by age group, is seen in table 1 and figure 1.

According to the data received, statistical analysis using gender as a variable describes the mean value of the participants as 12.4, the median as 12 and the range as 32, can be seen in table 7 and figure 7 respectively.

All the answered questionnaires (N=87), were validated against the given instructions for answering the questionnaires. The data were coded to the excel work sheet. All the data were relevant for analysis (N=87), representing 100% of the sample group.

Table 1: Numbers of participant in the survey “are you at risk of kidney failure” by age group

| Age Groups | Number of People |
|------------|------------------|
| 21-30 | 13 |
| 31-40 | 18 |
| 41-50 | 33 |
| 51-60 | 7 |
| 61-70 | 12 |
| 71-80 | 3 |
| 81-90 | 1 |
| Total | 87 |

In table 1, it shows that people are ready to check the status of their kidney function as seen in the total amount of people that took part in the survey.

Figure 1: Amounts of participant in the survey “are you at risk of kidney failure” by age group

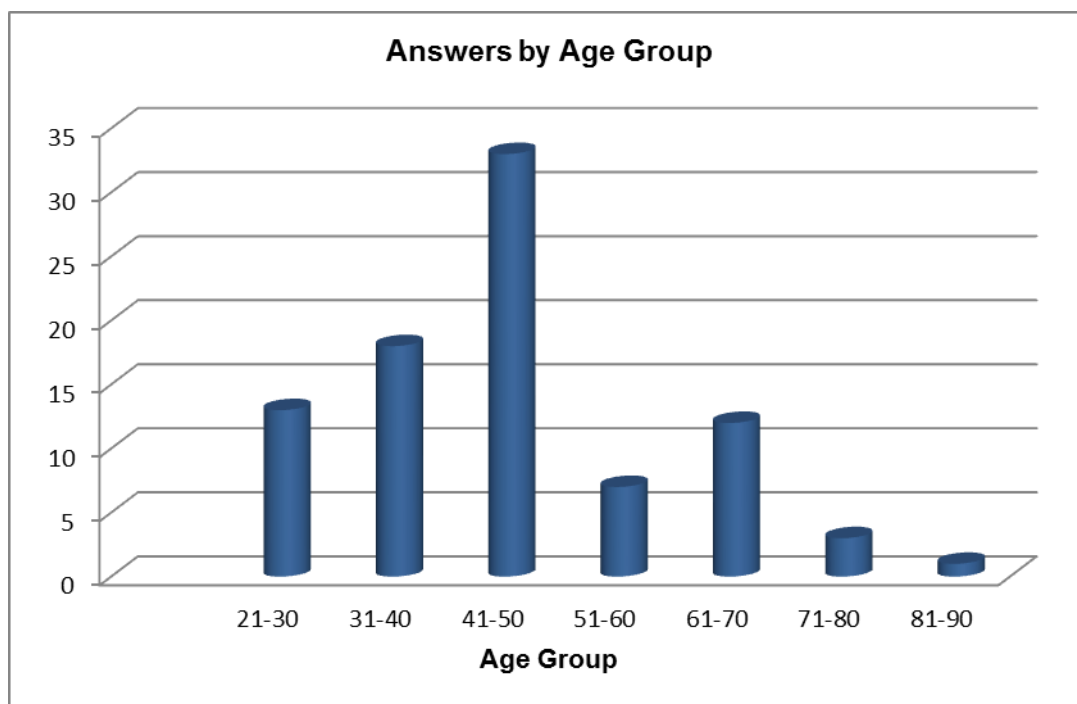


Figure 1 illustrates graphically the incidence rates of study group who are at risk of kidney failure. It clearly shows that age group of 41 – 50 years are more ready to test the functional capacity of their kidney.

According to the data, one of the dependent variables of this sample group is gender. The participants were 53 males and 34 females as illustrated in table 2 and as illustrated in percentage, in figure 2.

Table 2: Answers by Gender

| Gender | Number of Persons |
|--------|-------------------|
| Male | 53 |
| Female | 34 |
| Total | 87 |

Figure 2: Amounts of participant in the survey “are you at risk of kidney failure” by gender

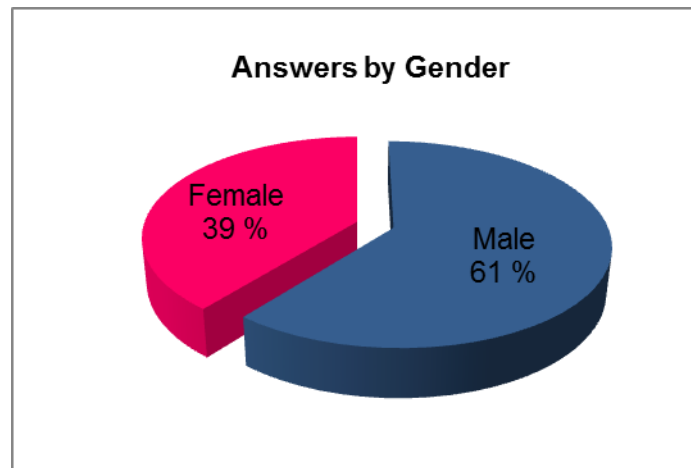


Figure 2 illustrates that more than half of the participant in the study are male.

According to the analysis of this study, it can be seen that 76% of the population are at risk of kidney failure. Using SPSS and excel I was able to compute the amount of participants that answered “YES” to the survey “are you at risk of kidney failure” and the amount of participants that answered “NO”. This is illustrated in table 3 and figure 3.

Table 3: At risk compared to not as risk of kidney failure

| Survey Result | Number of Persons |
|-------------------------------|-------------------|
| At Risk of Kidney Failure | 66 |
| Not At Risk of Kidney Failure | 21 |
| Total | 87 |

Table 3 shows the numbers of participant that are at risk of kidney failure, compared to numbers of participant that are not at risk of kidney failure.

Figure 3: At risk compared to not as risk of kidney failure

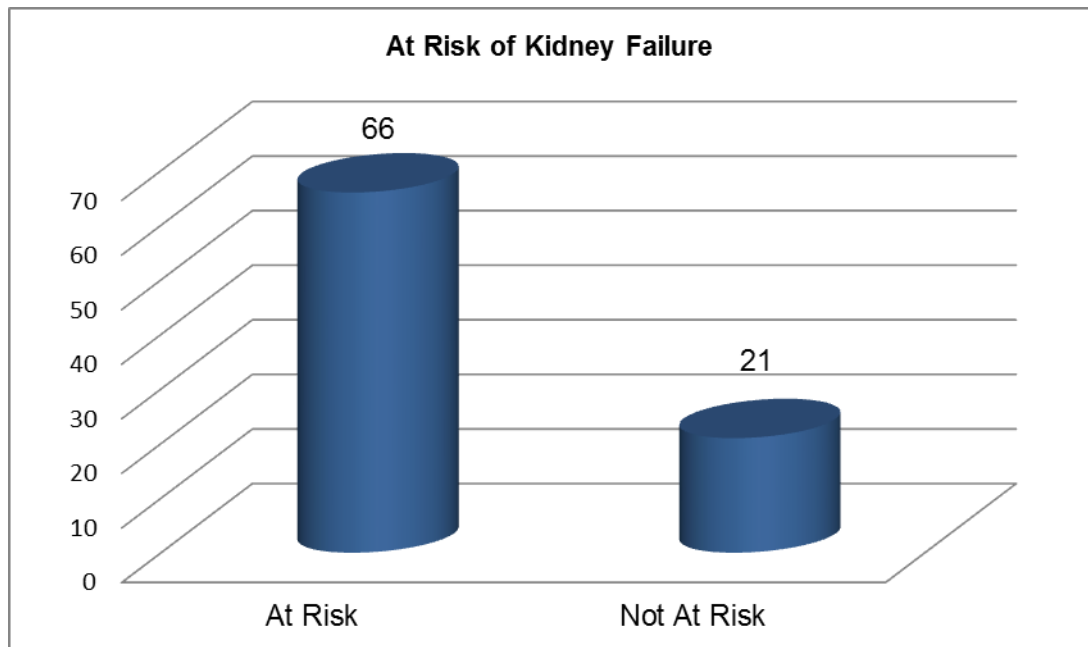


Figure 3 testifies and justifies the purpose of this study, which is the incidence of kidney failure is increasing in the Finnish population. Therefore, early intervention is needed to cultivate the progression of kidney failure.

The data of this study is later computed according to gender as one of the dependent variables of the sample group. Using SPSS and excel I was able to compute the amount of participants that answered “YES” to the survey “are you at risk of kidney failure” by gender as seen in table 4 and figure 4.

Table 4: Number of persons at risk of kidney failure by gender

| Gender | Number of Persons |
|--------|-------------------|
| Male | 38 |
| Female | 28 |
| Total | 66 |

Table 4 explains men being more at risk of kidney failure according to the data of this study.

Figure 4: Amount of persons at risk of kidney failure by gender

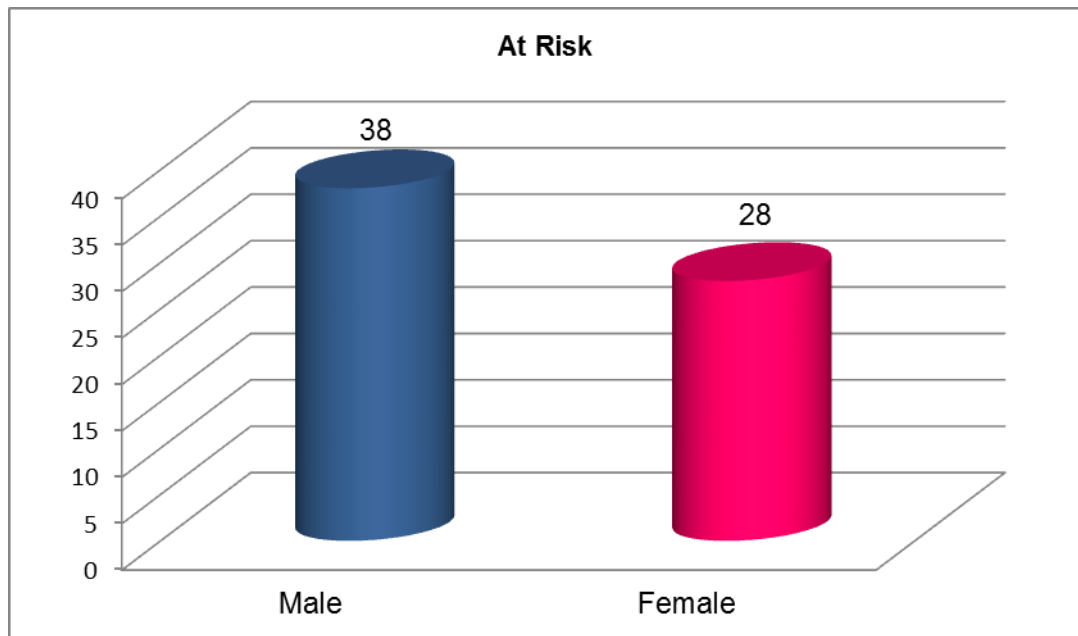


Figure 4 illustrates data analysis of this study, showing men been more at risk of kidney failure.

According to the data, the independent variables of the sample group are the noticeable risks of kidney failures. These are analysed against gender the dependent factor, as seen in table 5 and figure 5 respectively.

Table 5: Numbers of participants by risks and gender

| Gender / Symptom | Smoke | Drink | Obesity | High Blood Pressure |
|------------------|-------|-------|---------|---------------------|
| Male | 48 | 42 | 30 | 38 |
| Female | 18 | 24 | 36 | 28 |
| Total | 66 | 66 | 66 | 66 |

Table 5 shows that men are more at risk in all area of the study regarding risks of kidney failure, but this is influenced by the larger amount of men that participated in the survey. Not so much difference in both genders when looking at obesity and high blood pressure as a risk of kidney failure.

Figure 5: Amount of participants by risks and gender

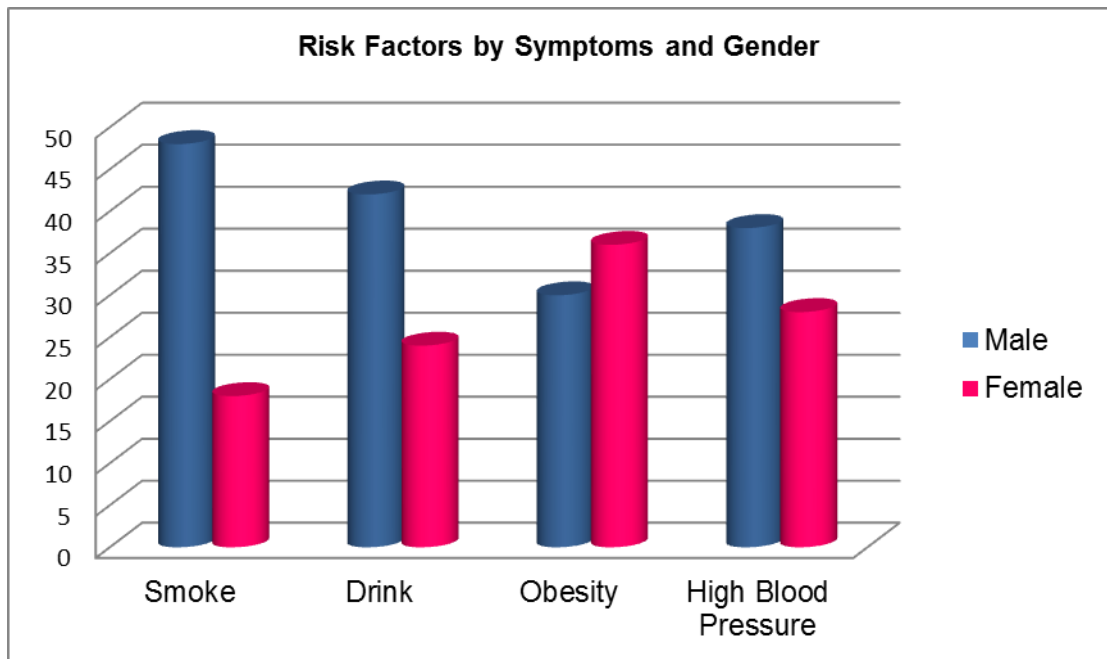


Figure 5 describes that females are more obese than men in this study group even though there are less amount of women that participated in this study group. The high proportion of obese women could be explained by natural child bearing.

The independent variables of the sample group are analysed against the dependent variables age group and gender, as seen in table 6a for male and figure 6a for male.

Table 6a: Numbers of *male* participants by age groups and risks

| Symptom / Age Group | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | Total by Sympton |
|---------------------|-------|-------|-------|-------|-------|-------|-------|------------------|
| Smoke | 8 | 6 | 12 | 10 | 6 | 4 | 2 | 48 |
| Drink | 6 | 9 | 8 | 10 | 4 | 3 | 2 | 42 |
| Obesity | 3 | 3 | 8 | 8 | 4 | 2 | 2 | 30 |
| High Blood Pressure | 1 | 4 | 6 | 10 | 5 | 8 | 4 | 38 |
| Total by Age Group | 18 | 22 | 34 | 38 | 19 | 17 | 10 | |

Table 6a shows that age group 51 – 60 years are predominantly at risk of kidney failure than any other age group among the male participant, looking at all the factors that contribute kidney failure.

Figure 6a: Amount of *male* participants by age group and risks

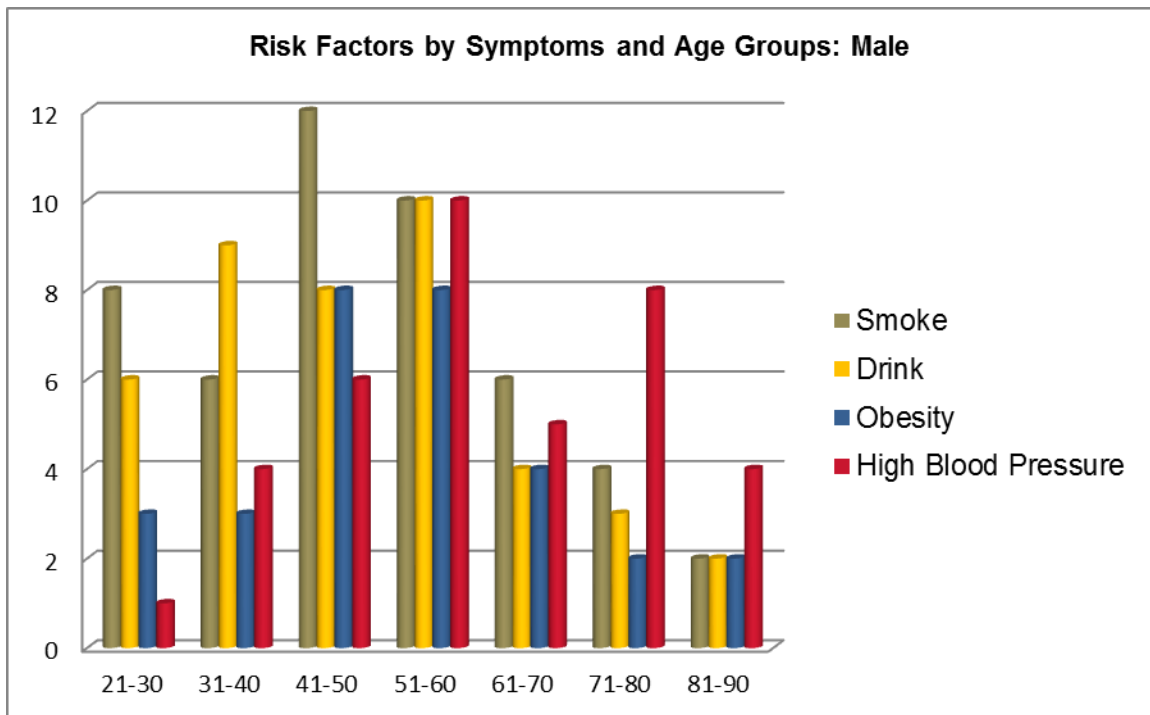


Figure 6a shows that all the factors that contribute to kidney failure are evenly balanced in age group 51 -60 years among the male participant.

According to the data, the independent variables of the sample group are the noticeable risks of kidney failures. These are analysed against the dependent variables age group and gender, as seen in table 6b for female.

Table 6b: Numbers of *female* participants by age groups and risks

| Symptom / Age Group | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | Total by Sympton |
|---------------------|-------|-------|-------|-------|-------|-------|-------|------------------|
| Smoke | 5 | 5 | 4 | 1 | 2 | 1 | 0 | 18 |
| Drink | 4 | 8 | 4 | 6 | 2 | 0 | 0 | 24 |
| Obesity | 1 | 8 | 4 | 12 | 4 | 4 | 3 | 36 |
| High Blood Pressure | 2 | 6 | 4 | 4 | 6 | 4 | 2 | 28 |
| Total by Age Group | 12 | 27 | 16 | 23 | 14 | 9 | 5 | |

Table 6b shows that age group 31 – 40 years are predominantly at risk of kidney failure than any other age group among the female participant, looking at all the factors that contribute kidney failure.

According to the data, the independent variables of the sample group are the noticeable risks of kidney failures. These are analysed against the dependent variables age group and gender, as seen in figure 6b for female.

Figure 6b: Amount of *female* participants by age groups and risks

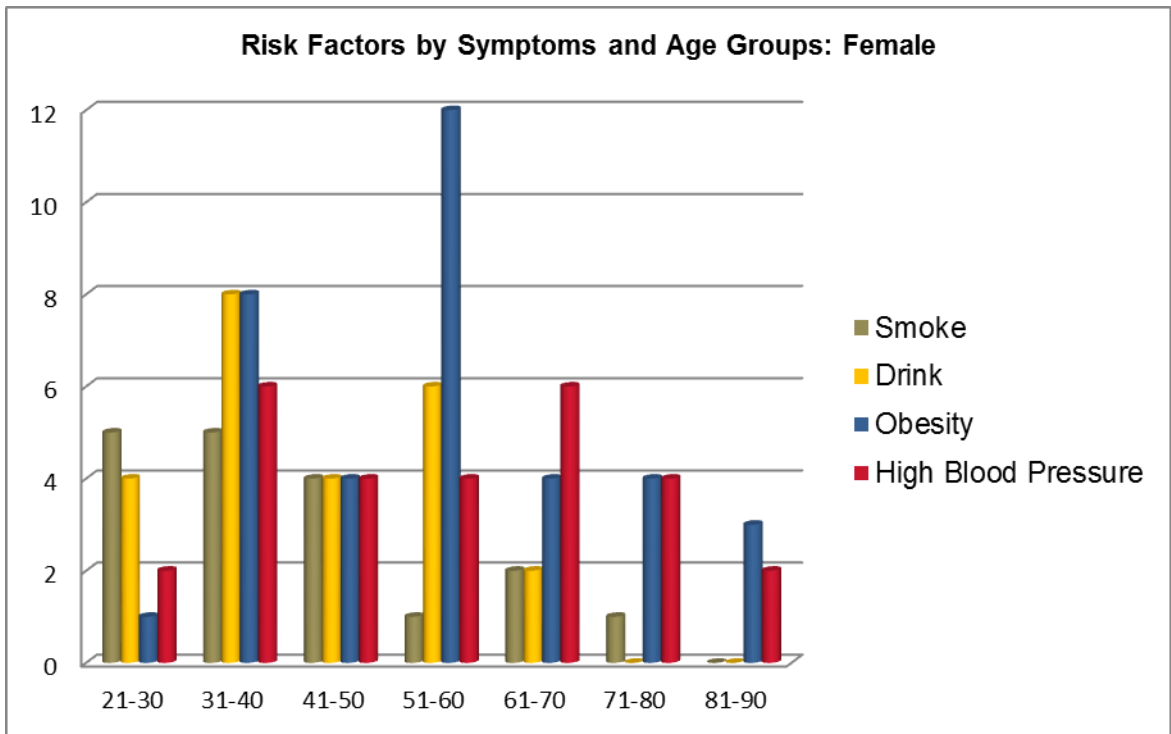


Figure 6b shows that all the factors that contribute to kidney failure are evenly balanced in age group 31 -40 years among the female participant. Obesity is the highest risk factors in these age groups.

According to the data received, statistical analysis using gender as a variable describes the mean, median and range value of the participants as seen in table 7 and figure 7.

Table 7: Statistics

| Statistics | Calculation | Result |
|------------|-------------------------|--------|
| Mean | 87 / 7 | 12,4 |
| Median | 1, 3, 7, 12, 13, 18, 33 | 12 |
| Mode | | none |
| Range | 33 - 1 | 32 |

Table 7 shows that no group has an identical value, as in occurrence to the participation of the study.

Figure 7: Statistics

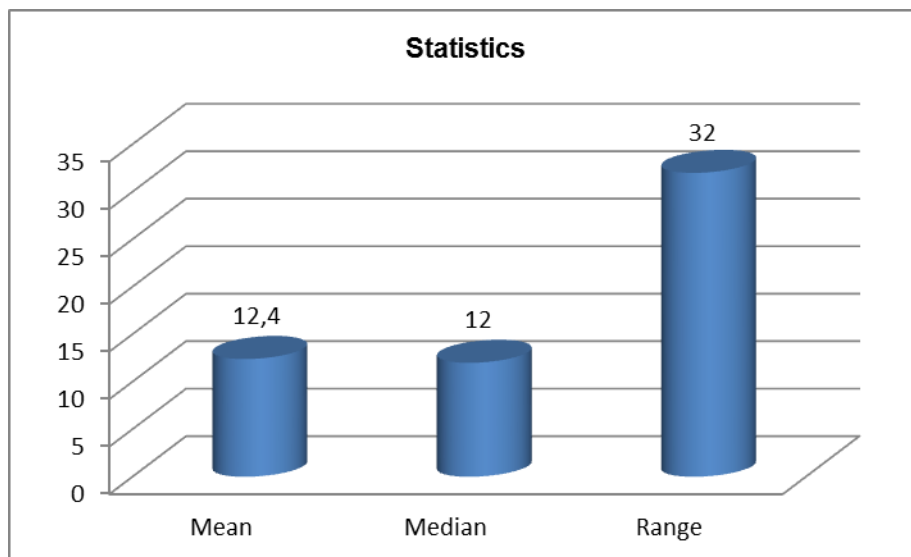


Figure 7 illustrate the average amount of people that participated in the study, using age group as a reference.

6. LIMITATIONS AND ETHICAL CONSIDERATIONS

6.1 VALIDITY AND RELIABILITY

Denscombe (2006) defines that it is an important part of the research to judge the research quality. Validity looks, whether the findings are convincing, well-grounded and not biased (Polit et al. 2004:36). The validity of this study can be seen in the questionnaire used to ask people about their risk of kidney failure. I actually measured what I wanted to measure, that is, early intervention of kidney failure. By asking the sample group about their risk of kidney failure, I was able to make them think about their health, and if needed to contact their doctors for further check-up. The questions in the questionnaire were phrased appropriately and so are the options for responding. The questionnaire had items about known risks of kidney failure. The validity of this study is that data is collected from numerous sources, according to Yin 2003, the collection of data by numerous sources will help to raise the soundness of a thesis (Yin 2003).

The reliability of this study can be seen in the responses to the questionnaire, as they were consistent. More than half of the respondents (76%) were at risk of kidney failure. Statistics and reports show that there is an increase in numbers of new patients diagnosed with kidney failure. Therefore, similar results will be achieved if the same questionnaire were repeated afterwards with the same sample (Sauders 2007).

6.2. ETHICAL CONSIDERATIONS

The goal of research, as defined by Burns et al. (2005:203), is to generate rigorous scientific knowledge. Therefore, for a scientific research to be ethically acceptable with credible findings, a good scientific conduct is required. Honesty, integrity and accuracy of the research process must be guaranteed when reviewing, reporting and describing research studies. (Burns et al. 2005)

The ethical consideration of this study is that the researcher and the researchers biases are not known to participants in the study, and the participant characteristics are deliberately hidden from the researcher. Translation of questionnaire from English language to Finnish language can result to some limitations. This study was carried out in a neutral and objective way. Own interpretations and data materials were used. The sources of books, journals and web-sites were appropriately referenced.

The Finnish heart association (2013) states that in Finland, cardiovascular diseases are a significant public health problem. The most common cardiovascular diseases are high blood pressure, one of the causes of Acute Kidney Injury. Severe kidney failure can lead to life-threatening if left untreated (Holmström 2005).

Based on ethical principle of benevolence, it is acknowledged that patients have the right to good health education, such as health promotion, early intervention on risks threatening life (Burns et al. 2005: 190). Therefore, it can be established that this study has a strong connection with ethics in health promotion.

7. RESULTS

According to the data analysis of this study, it can be seen that 76% of the population are at risk of kidney failure, this is a high number. Thus, people needed to be informed about awareness such as life style behavioural change and the preventable risks associated with kidney failure, such as, high blood pressure, diabetes, overweight, alcohol, age, smoking, and diet. Thereby; the progression of kidney failure can be reduced.

According to the analysis of the data collected, it showed that 1/3 of the population were at risk of kidney failure, this continuing high incidence of kidney failure indicates a need for greater efforts at primary prevention, such as life-style change and behavior change, other complications that relates to kidney failure can be avoided, thus reduce the growing burden of deaths and disability from kidney failures and cardiovascular diseases.

Through this study, prevention is more effective if the factors that lead to kidney failure are addressed. The sample group was made to realize the risk of kidney failure, which includes high blood pressure, diabetes, age, obesity, smoking, excessive alcohol consumption, amongst others. Patients were made to understand the symptoms of kidney failure, which will allow them to contact their doctors early enough before the symptoms get worse.

The results also show that smoking is high amongst men in this study group, while obesity is higher in women in this study group respectively, 2 of the commonest risk associated with kidney failure. High blood pressure is a major public health problem in Finland. The higher prevalence in men than in women is alarming. There can be several reasons, one potential reason is that among the youngest age group (21-30 years) and (31-40 years), women's blood pressure is monitored during pregnancy and also measured during annual visits to the doctor if they are using oral contraceptives.

Through this study, the objectives of this project was achieved, as in examining the prevalence, predisposing factors for kidney failure, its hazards as an ingredient of cardiovascular risk profile, and the implications of this information for early intervention, prevention and treatment of reducing the progression of kidney failure. Also, emphasizing the importance of early intervention as a means of reducing the progression of kidney failure. Making recommendation with which health professionals gain awareness in the preventive educations of kidney failure, emphasizing on health promotion as a model for this group of people with that are at risk of kidney failure.

8. CONCLUSION / DISCUSSION / RECOMMENDATION

In conclusion, the continuing high incidence of kidney failure indicates a need for greater efforts at primary prevention. Not until this can be accomplished, detection and control of high blood pressure and other risk factors associated with cardiovascular diseases must remain a high priority for prevention minded health professionals.

Prevention is more effective if the factors that lead to kidney failure are addressed, factors as high blood pressure, diabetes, age, obesity, smoking, excessive alcohol consumption, amongst others.

Though, kidney failure has no cure but it can be treated. The suggested treatment of kidney failure is prevention. Early detection of kidney failure may help to delay the process of kidney damage. Other treatment of kidney failure consists of measures to help control signs and symptoms of kidney failure, reduce complications, and slow the progress of the disease. Such measures as diet, exercise, change of life style.

Health professionals must provide people with appropriate information in form of teaching, therapeutic lifestyle change, physical activities, and avoidance of alcohol, fat restriction, salt restriction and nutritional guidance which have shown to be beneficial to patients with kidney failure. The urgency and choice of treatment of existing kidney failure should be based on the multiple cardiovascular risk profile that more appropriately target high blood pressure.

Kidney failure is not new, but studies suggest that diet is playing a more crucial role in controlling the progression of the kidney failure. Patients must focus on balancing nutrients along with watching their intake of unsaturated fat, cholesterol, carbohydrates and calories. High blood pressure and diabetes are the two leading causes of kidney failure. As KELA stated that about half a million Finn received drug compensation on high blood pressure medicines.

Good blood pressure control has been shown to be essential in protecting kidney function. Health care professionals often overlook the use of sodium restriction in blood pressure control because there are so many medications available. Sodium restriction can lower blood pressure and also prevent swelling in the body's tissue, such as in the lower legs and feet.

A future challenge, by 2020, according to the Finnish Kidney and Liver Association, Finland is the European country with the highest proportion of older people of working age, which will affect the treatment possibilities. The rates of patients that will need dialysis treatment for patients which are over 75years old are constantly increasing. Due to this, identifying the risks and symptoms, as well as knowing the main preventable measures to decrease the incidence of kidney failure is of great importance nowadays.

Follow up should be implemented by health professionals, as needed for the underlying cause of kidney failure and the severity of the disease. The health care provider will monitor the patient's underlying condition and do appropriate blood tests and urinalysis to monitor kidney and urinary tract health.

Preventive measures may be needed in some situations to prevent the problem from occurring again. Patients are to be educated about taking substances or medications that can poison or damage kidney tissues. For example, difficulties urinating or blood in the urine should prompt a visit to the doctor as soon as possible.

Health care providers should work toward empowerment for self-care and enhancing the client's capacity for self-care through education and development.

Future study should highlight obesity amongst others as key risk factors that leads to kidney failure.

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Questionnaire in Finnish language

Hei! Olen Isaac Odigbo, sairaanhoitaja Meilahden Kolmio Sairaala, munuaisosasto 6B:lta. Suoritan ylemmää korkeakoulututkintoa Kymenlaakson ammattikorkeakoulussa ja teen lopputyö aiheesta: munuaissairauksia ennaltaehkäisyä; mallina Terveiden edistämisen, yhteistyö Nefrologia yksiköt Helsingin Yliopiston Keskus Sairaala, munuaisosasto 6B kanssa.

Tämä kysely lomake on suunnattu munuaisten vajaatoiminta riskiryhmälle, onko he saanut entudeestan tieto munuaisvajaatoiminnasta ? Kysely lomake täyttäminen vie noin 10 minuuttia. Kysely lomake on tarkoitus olla selkeä ja helposti ymmärrettävä. Tarkoituksena on, että ympyröit valitsemasi vaihtoehdon. Kyselyyn voi vastata nimettömästi, eikä henkilötietojasi tulla käyttämään missään vaiheessa tutkimusta. Käsitelen vastauslomakkeen luottamuksellisesti, jonka jälkeen hävitän ne. Tutkimuksen tulokset käsitellään tilastollisin menetelmin ja raportoidaan lopputyö esitelyssä. Kyselyn tavoitteena on saada palautetta jotta voi auttaa tulevaisuudessa munuaissairauksen ennaltaehkäisy sekä munuaisten hyvä hoito hyötyä yksikölle ja yhteiskunnalle.

Palautathan kyselylomakkeen viimeistään 27.2.2013.

Jos sinulla on lisäkysymksiä, ottaa yhteyttä minuun.

Isaac Odigbo,

0451181699

isaac.odigbo@student.kyamk.fi

KIITOS!

Oletko vaarassa sairastamaan munuaisten vajaatoiminta?

1. Tupakoitko ?

kyllä ei

2. Onko suvussasi (perhessasi) korkea verenpaine tai munuaissairauksia ?

kyllä ei

3. Sairastako diabetesta ?

kyllä ei

4. Oletko ylipainoinen, vaikea lihavuus, BMI 35,0 – 39,0 (paino kg / pituus, metria x pituus, metria) ?
Normaali BMI 18.5 – 24.99.

kyllä ei

5. Oletko suuri alkoholin kuluttaja, esimerkiksi yli 45cl 12% viina JOKA viikko (1lasi valko/punaviini, 1pullo olluta) ?

kyllä ei

6. Oletko yli 50v, ikä-ryhmä ?

kyllä ei

7. Käytätkö tulehduskipu lääkkeitä, esim kipu lääkkeitä jotka voi osta apteekista ilman lääkärin receiptit esim BURANA tai ASPIRIN , mutta ei PARACETAMOLIA (Burana ja Aspirin ei sopii munuaiselle, Paracetamol on ystävällisempi munuaiselle).

kyllä ei

8. Onko sinua hoidettu ennenmään kuin kerran virtsatie infektiosta ?

kyllä ei

9. Käytätkö suola enemmän kuin suositus annos 5 gramma/vrk, n:1tee lusikka (muista että aamianen, lounas, päivällinen, ilta-pala, leipä, valmiita ruoka jotka osta kauppasta, jne sisältä jo suola) ?

kyllä ei

10. Tähän voit kirjoittaa vapaata palautetta kyselystä:

- Mitä halua tietä munuaisten vajaatoiminnasta ?
- Mitä parannettavaa kyselystä ?

Jos vastasit kyllä useampaan kuin yhteen kysymykseen, pyydä lääkäriäsi tarkastamaan munuaistesi kunto

Questionnaire in English language

Hello! I am Isaac Odigbo, a registered nurse from Meilahti hospital, nephrology ward 6B. I am studying for master's degree at Kymenlaakson University of Applied Sciences, and I am doing my final project on prevention as a model of health promotion of kidney failure in collaboration with the Nephrology departments at Helsinki University Central Hospital and ward 6B.

This questionnaire is meant for people/patients who are at risk of having kidney failure; have they had any information about kidney failure? It takes about 10 minutes to fill out this questionnaire. This questionnaire is meant to be clear and easy to understand. You are to circle your selected option. This questionnaire can be answered anonymously. The answered questionnaires will be analyzed confidentially, and any of your private information will not be displaced. The result of this survey will be stored for future use, and also will be published as a report during the final presentation of this project.

Objective of the survey is to get feedback in order to help in initiating preventive method as a means of treatment for kidney, having a great benefit for the patient, the ward and the community.

Return the questionnaires by 27.2.2013.

If you have any further questions, do not hesitate to contact me.

Isaac Odigbo,

0451181699

isaac.odigbo@student.kyamk.fi

THANKS!

ARE YOU AT RISK FOR KIDNEY FAILURE?

1. Do you smoke?
 yes no
2. Is there history of high blood pressure/kidney failure in your family?
 yes no
3. Have you been diagnosed with diabetes?
 yes no
4. Are you overweight, is your BMI between the range of 35.0 – 39.0, regarded as overweight (weight kg/height in meters x height in meters)? Normal BMI is between the ranges of 18.5 – 24.99.
 yes no
5. Do you drink more than 45cl of 12% alcohol EVERY week, e.g. 1 glass of wine or 1 bottle of beer?
 yes no
6. Are you above 50 years old?
 yes no
7. Do you use pain killer medicine (pills/tablet) anything other than PARACETAMOL that one can get from the pharmacy without doctor's prescription e.g. BURANA, ASPIRIN?
 yes no
8. Have you been treated more than once with urinary tract infection?
 yes no
9. Do you consume salt more than the recommended usage 5grams/day, approximately 1tea-spoon (remembering breakfast, lunch, dinner, supper, bread, readymade food bought from the supermarkets, are salted already)?
 yes no
10. Here you can write freely, any feedback about the questionnaire:
 - What would you like to know about kidney failure?
 - What can be improved about this questionnaire?

If you answered YES to more than one question, ask your doctor to check your kidney status/performance, for example through blood sample test, urine sample test etc.

Numbers of participants that answered “NO”

The data of this study is later computed according to gender as one of the dependent variables of the sample group. Using SPSS and excel I was able to compute the amount of participants that answered “NO” to the survey “are you at risk of kidney failure” by gender as seen in table 1 and figure 1.

Number of persons NOT at risk of kidney failure by gender

| Gender | Number of Persons |
|--------|-------------------|
| Male | 15 |
| Female | 6 |
| Total | 21 |

Table 1 explains the number of participants NOT at risk of kidney failure according to the data of this study.

Amount of persons NOT at risk of kidney failure by gender

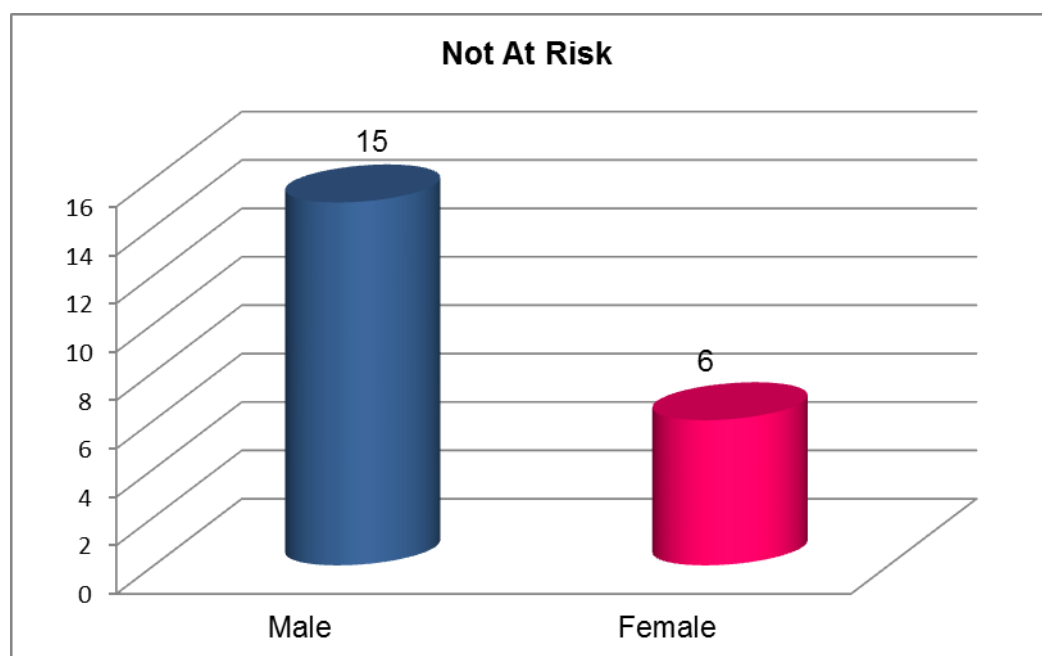


Figure 1 illustrates data analysis of this study, showing amount of participant NOT at risk of kidney failure.

STUDENT

| | |
|---|--|
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| Specialization and group HEALTH PROMOTION HP11Y | |

COMMISSIONER

| | |
|--|---|
| Company/organization HUS, MEILAHDEN KOLMIOSAIRAALA, Vuodeosasto 6 B | Contact person in the company/organization Eero Honkanen / Sari Aaltonen |
| Address Meilahden kolmiosairaala, Haartmaninkatu 4, rakennus 3 | Postal Code and City PL 372, 00029 HUS |
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COMMISSION OF BACHELOR'S / MASTER'S THESIS

| |
|---|
| <input type="checkbox"/> The commissioner pays to the student or Kymenlaakso University of Applied Sciences a fee, upon which the parties have in written form agreed before the student starts the implementation of the thesis. |
| <input checked="" type="checkbox"/> The commissioner has appointed a supervisor for the work before the student starts the implementation of the thesis. |
| <input type="checkbox"/> The commissioner initially intends to utilise the results of the thesis in business activities. |

COUNSELLING AND SUPERVISION

| |
|--|
| Counselling teacher(s) Seija Aalto |
| E-mail seija.aalto@kyamk.fi |
| Supervisor(s) in the company/organization Sari Aaltonen |
| E-mail sari.aaltonen@hus.fi |

THESIS

| | |
|---|--------------------------------|
| Subject (max. 200 characters) Nursing (nurse's) intervention with Acute Kidney Injury (AKI) patients in collaboration with the Nephrology Clinic of HUS, Kolmio Sairaala and / or with The Kidney and Liver Association. | |
| Goals of research and development, commission (max. 300 characters) The goals of the research are to bring to "will be future" AKI patients and already AKI patients awareness of early contraceptives intervention of AKI, (that is; "prevention is better than cure"), theoretical and practical knowledge and information concerning AKI, prevention, treatment, Nutrition, | |
| Essential methods (max. 300 characters) Gathering of published scientific and evidenced based literature review about AKI, my own experience and pre-knowledge of working as a professional nefrologist nurse, and interaction with AKI patients at meilahden kolmio sairaala vuodeosasto 6B. | |
| Started (date) 06.09.2011 | Assignment to the commissioner |
| The thesis qualifies for the definition of Statistics Finland concerning R & D *) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |

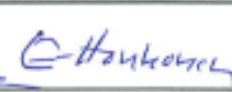


*) The definition of R & D is available at the student affairs office or on the website of Statistics Finland <http://www.tilastokeskus.fi/ti/itk/ka/en.html>

TERMS OF AGREEMENT

| | |
|---|---|
| <p>Student counselling and responsibilities related to the thesis The student is responsible for the completion and results of the thesis. The responsibility of Kymenlaakso University of Applied Sciences is limited to normal student counselling.</p> <p>The commissioner adheres to give the student any information and material needed in making the thesis and to supervise the work from the commissioner's or organisational standpoint.</p> <p>Rights to the results or other material, equipment and applications related to the thesis The copyright and ownership to the results of the thesis belongs to the maker. The commissioner obtains the right to use and commercially utilise the results of the thesis only by agreement with the maker. The maker of the thesis is liable for reporting the results of the thesis to the commissioner.</p> | <p>Publication of the results and confidentiality The whole thesis is public. If the thesis includes commercial or technical business secrets or other confidential information, the report must keep the confidentiality of the thesis. The confidential information has to be kept in the background material, when necessary. The thesis can also be published in the Internet.</p> <p>The contracting parties (the student, the commissioner and the supervising teacher) adhere to keep secret all confidential information and documents that have come up in making the thesis and the negotiations before and after that and to restrain themselves from utilising the confidential information of the other party without a separate permission.</p> <p>Expenses and compensation The commissioner and the student agree together upon the compensation of eventual expenses due to the thesis (e.g. acquisition of tripartite agreement raw materials, travels, wages etc.). The main rule is that Kymenlaakso University of Applied Sciences does not compensate the expenses of an individual thesis.</p> |
|---|---|

We have made this tripartite agreement on the realisation of the bachelor's/master's thesis as written above.

SIGNATURES

| |
|---|
| PLACE, DATE AND COMMISSIONER'S REPRESENTATIVE Helsinki 29, 4 20 15  |
| PLACE, DATE AND STUDENT HELSINKI 29, 04 20 13  |
| PLACE, DATE AND COUNSELLING TEACHER Kukka 2, 5 20 13  |

This agreement has been written in three identical copies, one for the commissioner's enterprise, one for the student and one for the student affairs office for registration.