

Bachelor's thesis
Degree programme
Nursing
2011

Grace Kamau

CERVICAL CANCER

– Test and Prevention



TURUN AMMATTIKORKEAKOULU
TURKU UNIVERSITY OF APPLIED SCIENCES

BACHELOR'S THESIS | ABSTRACT
TURKU UNIVERSITY OF APPLIED SCIENCES

Degree programme | Nursing

Completion of the thesis | 44

Instructor: Heikki Ellilä & Mari Lahti

Author: Grace Kamau

CERVICAL CANCER ; TEST AND PREVENTION

The main target group for this bachelor's thesis was mainly the female, having just basic information on cervical cancer the author sought to know more on cervical cancer in depth focusing closely on the cause of cervical cancer, ways of testing cervical cancer as well as possible ways of prevention. A few of treatment methods have been mentioned although not much emphasis was put on it since the author was dealing mainly with prevention.

The main aim of these bachelor's thesis paper is to give efficient information on the different screening methods available in order to fight against cervical cancer and contribute to the mortality decrease as a result of the HPV virus. The aim is to grasp the attention of especially the female gender and enrich them with awareness and the needed knowledge regarding cervical cancer.

Materials used to collect information came from different sources, most were peer reviewed articles that were searched by using keywords on google, this was done in order to ensure that the articles were relevant and related to the topic. Cervical cancer related organisation's webpages were also referred to for information.

A variety of cervical cancer screening methods were found and compared against each other to find most suitable methods. Information on vaccines available were also found as well as information on how they are used and groups suitable for their use.

The study was found to be productive and suitable for use for reference for women that want to find information on cervical cancer and ways by which they can begin to work on preventing themselves from HPV infection or development of cervical cancer.

KEYWORDS:

Cervical cancer, HPV virus, HPV infection, cervical cancer screening and vaccines,

CONTENT

| | |
|-------------------------------------|-----------|
| LIST OF ABBREVIATIONS | 4 |
| 1 INTRODUCTION | 5 |
| 2 LITERATURE REVIEW | 6 |
| 2.1 Risk factors | 10 |
| 2.2 Screening | 15 |
| 2.3 Vaccines | 24 |
| 2.4 Treatments for cervical cancer | 27 |
| 3 PURPOSE AND AIMS | 30 |
| 4 IMPLICATION OF THE PROJECT | 30 |
| 5 HEALTH EDUCATION | 31 |
| 6 ESTABLISHING WEBPAGES | 32 |
| 7 DISCUSSION | 34 |
| 7.1 Reliability and validity | 34 |
| 7.2 Ethical consideration | 34 |
| 7.3 Limitations | 35 |
| 7.4 Conclusion and recommendation | 36 |
| SOURCE MATERIAL | 39 |

TABLES

| | |
|--|----|
| Table 1. Incidents and mortality of cervical cancer in 2008 | 10 |
| Table 2. Cases of cervical cancer in develop and developing counties | 28 |

LIST OF ABBREVIATIONS

| | |
|------|--|
| ACCP | Alliance for cervical cancer prevention |
| ACS | American Cancer Society |
| CIN | Cervical intraepithelial neoplasia |
| CCA | Coalition to stop cervical cancer |
| FDA | Food and Drug administration |
| HPV | Human pappioma virus |
| RCN | Royal collage of Nursing |
| SIL | squamous intraepithelial lesion |
| WHO | World health organization |
| PATH | Program for Appropriate Technology in Health |

1 INTRODUCTION

According to the world health organization (WHO 2002) cervical cancer is said to be the world's second deadly cancer with an estimate of about 493,243 women diagnosed with it and 273,505 dying from it per year. Cervical cancer is also the world's second most frequent among women between 15 and 44 years of age. In Finland about 2.23 million women aged 15 years and over are at risk of getting cervical cancer, current estimation states that out of 164 diagnosed with cervical cancer per year about 81 of them die as a result of the disease. It is the 15th most common cancer in Finland and the 4th most common cancer among the women in Finland. (WHO 2002.)

Cervical cancer was once known as the most deadly cancer in America until the years 1955 to 1992 when its rates decreased by 70% due to increase in pap smear screening and more awareness among society, it is said to decline by 3% each year but the numbers still remain high. According to the American Cancer Society recent estimate states that in the year 2011 about 12,710 new cases of invasive cancer will be diagnosed and of these about 4,290 deaths will be recorded. (American Cancer Society 2010.)

Cervical cancer is as a result of Human PapillomaVirus which is transmitted through sexual intercourse, in most cases the male is a carrier of the papilloma virus that infects and generates in females. Despite the risks of the HPV virus both males and females are hardly aware of the virus and the risks it carries. (Roland et al 2009, 5.)

In America within an estimate of every six minutes a gynecological cancer is diagnosed with the majority being cervical cancer among women of the ages 40-55 years of age. In 2007 an average of about 12,000 to 16,000 females were diagnosed with cervical cancer. (Godfrey 2007, 1397.)

Cancer fatalism has continued to increase among especially young women, this is the belief that women have had that diagnosis of cancer directly translates to inevitable death therefore they find it better to avoid going for screening and are with no knowledge whatsoever on their health status. Education and Knowledge on both breast cancer and cervical cancer has continued to decrease as the cancer fatalism increases not because there is no available information but because the women have been ignorant to enlighten themselves. (Powe 2006, 2.)

2 LITERATURE REVIEW

The cervix is located in the lower part of the uterus also called uterine cervix, it connects the body of the uterus by the cervix part called endocervix to the birth canal by the part named exocervix. Cells covering the cervix are referred to as squamous cells and the glandular cells (American Cancer Society, 2010.)

Cervical cancers is a cancer malignant of the cervix or within the cervical area. It may form in the interior lining of the cervix, junction of the vagina and the uterus. (Saonere 2010, 314- 323). Cervical cancer begins to develop in the cells around the cervix. Pre-cancerous cells which are described as cervical intraepithelial neoplasia (CIN), squamous intraepithelial lesion (SIL) and dysplasia. The pre-cancerous cells cancer can fully grow into cancer. There are two main forms of cervical cancer namely squamous cell carcinoma and adenocarcinoma, of these types 80% to 90% of the cervical cancers are due to the squamous cell carcinoma which begin where the exocervix joins the endocervix. Cervical adenocarcinoma develops from the mucus-producing gland cells of the endocervix. (ACS 2010.) In some cases some of the cancers can be as a result of a combination of both squamous cells carcinoma and adenocarcinoma, the carcinoma is known as adenosquamous carcinoma or mixed carcinoma. In some women precancerous cells go away with no treatment whatsoever while others turn into true invasive cancers. (ACS 2010.)

There are other rare types of cervical cancer that may occur namely primary cervical lymphoma that involves the lymphnodes on the cervical area. However this does not commonly occur. In 2005 there were less than 60 cases of this kind of cervical cancer. Neuroendocrine cervical cancer is one of the aggressive tumors that are hard to discover or at times may be misdiagnosed. Melanoma of the cervix can be formed as a result of migrated metastasized lesion from any other part of the body. Adenoid cystic carcinoma of the cervix forms mostly in elderly group of patients in the early stages of the diagnosis. (Saonere 2010, 314- 323.)

Diagnosis of cervical cancer that helps to define the different stages can be classified by the use of the histopathological criteria which follows the royal college of pathologists. The reports of the cervical tumors indicate the type of tumor, size and extent of the tumor. Also the depth and pattern of invasion could be determined. Lymphovascular space invasion, possible presence of the tumor and its distance from margin. Status of the lymph nodes and any indication of invasion or any presence of pre-invasive disease. This assessment should be thoroughly done and well standardized since the diagnosis done determines the start and path of treatment. (Scottish Intercollegiate Guidelines Network 2008.)

There are a variety of stages of cervical cancer that identify the extent and site of infection. The first stage is stage 0 which is also in another name known as cervical carcinoma in situ, it is located at the top layer of cells along the cervix line. Carcinoma in situ is not considered as a cancer but in some cases it may develop into cancer if left untreated. (Cancer Research UK 2011.)

Stage 1 cervical cancer is only found in the cervix. Stage 1 is further divided into two groups A and B. In stage 1A only a small microscopic cancer is in the cervical tissue and is about 5-7 millimeters, the stage 1B may be just slightly wider than 7 millimeters and may be as large as 4 centimeters that can be visible even without a microscope. Stage 2 cervical cancer spreads from the cervix into the upper part of the vagina. Stage 2A means it has spread to about

two thirds of the vagina but having not touched the other surrounding tissues of the uterus unlike stage 2B where it may slightly spread into other tissues around the uterus as along with the two thirds of the vagina. Stage 3 cervical cancer spread into the lower part of the vagina and spread to the pelvic wall and the surrounding lymph nodes. In 3A cervical cancer spreads to the lower third of the vagina but does not affect the pelvic wall. Stage 3B cervical cancer spreads to pelvic wall, the tumor is large enough that it could block the ureters causing the risk of the kidney to enlarge or even seize to function with the risk of also having lymph nodes infected. The most crucial stage is Stage 4 which has cervical cancer spread to the bladder, rectum and even other parts of the body. In the stage 4B the cervical cancer may even spread to the liver, intestinal tract or lungs causing it to be a very deadly level. (Saonere et al 2010, 314-323.)

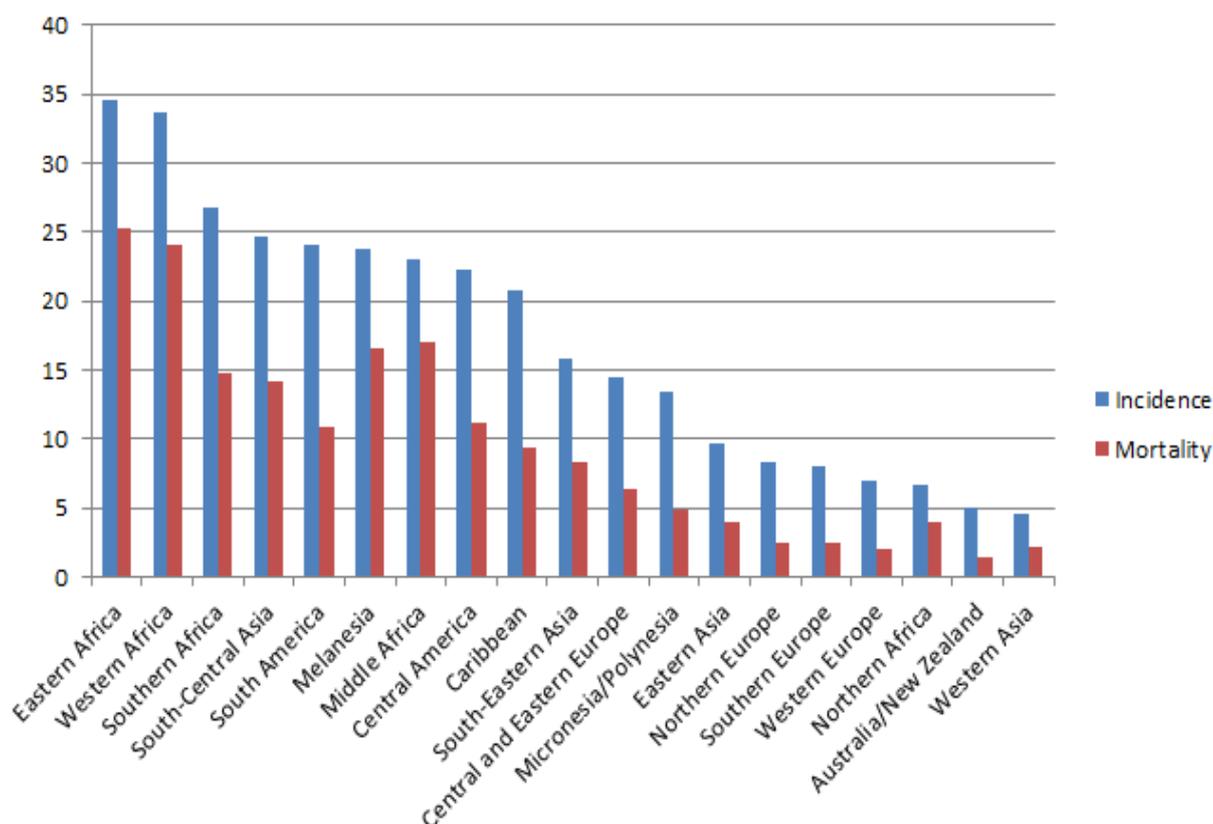
Cervical cancer has continuously been striking hard on the poorest countries such as central and south America, the caribbean, sub-saharan Africa, some parts of Oceania and Asia with rates as high as 30 per 100,000 women, compared with North America and Europe that have reports of about 10 per 100,000 cases. Approximately 1.4 million women worldwide living with cervical cancer and India may account for more than one-fourth of the total reporting nearly 132,000 new cases annually. A small population of women from the poor and developed countries that receive cervical cancer treatments therefore having a window of 7 million women worldwide inclusive of possible precancerous conditions that have not been identified. (ACCP 2004.)

Developing countries have continued to increase the stress of the importance of breast cancer while over the years yet cervical cancer has reigned as a major cause of morbidity and mortality greatly due to the level of awareness both among society and healthcare providers as opposed to developed countries such as Finland that has been records of increase in HPV virus without affecting the mortality. (WHO 2002.)

In the year 2000 there were up to 47,100 new reported cases of cervical cancers and 288 000 of these ending up in death worldwide. About 80% of these cases were from developing countries. (WHO 2002, 5.) In 2008 there were 529,800 new cases of cervical cancer that were reported accounting for 9% of the worldwide cancers and 275,100 deaths making 8% of the cancer deaths. In total 56% for these cases and 64% of the total deaths were from developing countries. Differences between the mortality rates in developing countries compared to developed countries is highly notable in the table below, this is due to the response to cervical cancer campaigns that have been carried out. Women in developed countries are fully exposed to much more information, medical facilities and vaccines are available. In developing countries however the social economic state does not allow the cervical cancer to be a lead consideration factor, however some significant decrease in mortality may be credited to available cheaper methods of screening. (Jemal et al 2011, 79-80.)

SEE TABLE 1

Table 1. Incidents and mortality of cervical cancer in 2008. Source; Jemal 2011,8. <http://onlinelibrary.wiley.com/doi/10.3322/caac.20107/pdf> Updated 9.5.2011



2.1 Risk factors

The HPV virus infection which is the infection mainly responsible for cervical cancer is transmitted through sexual intercourse. There are about 100 different types of HPV viruses but only about 40 of these types affect the genital areas. Some of the other types infect the skin on other body areas like the hands, or feet. Genital warts known as condylomata acuminata are usually small, flat cauliflower like bumps that carry HPV virus even though at times it is in small percentage therefore not necessarily at risk of causing cervical cancer. Types 6 and 11 are responsible for the causing of the warts which develop in a period of six weeks to eight months. (Liles & Itano 2003, 272).

HPV virus hardly has any symptoms therefore causing it to be very hard to identify hence the need to go for cervical checkup and HPV testing (Godfrey 2007,1399). There are a total of 13 high risk HPV types that can cause low-grade cervical cell abnormalities. The high risk types have been detected in 90% of the cervical cancer tests with 70% of these being from HPV types 16 and 18. Infection by one type of HPV virus does not guaranty that a person is not suseptable to infection by a second or more types, among people infected with mucosal HPV about 5% to 30% get infected with more than one type of virus simultaneously. (Pink book 2011, 140.)

A woman having multiple sexual partners puts her at higher risk of acquiring the HPV infection which is dominant in men. (Like &Italo 2003, 272). However “A woman’s risk of cervical cancer depends less on her own sexual behavior than on that of her husband or other male partners”. (Castellsague et al. 2003, 346). By this hypothesis the author pointed out clearly on how men at that time and age are more promiscuous than women were know to be, unlike women majority of men are just carriers of the HPV virus and can transfer from one partner to another with them not getting any infection. Unfortunately with the new generation of reckless sexual behaviours that are equally evident among both genders increase the risk of infection of cervical cancer. In some other cases the HPV infection cells may be generated faster through direct carcinogenic actions that are aided by long term use of contraceptives also contribute greatly to the HPV virus development, contraceptives act as a generative agent with an increase of 2.2 folds increase in risk level although there has been no link clearly explaining the relation between the contraceptives and HPV virus. (Likes & Itano 2003, 273- 275.)

Women that have had three or more full term pregnancies are also said to be high risk patients. This is seen to be due to the different hormonal changes that make the women more susceptible to HPV infection. It is also considered a high risk for young aged women at about 17 years of age or younger when they have had their first full time pregnancies. They are twice more at risk of have cervical cancer later on in life compared with women that get pregnant at 25 years and over. (American Cancer Society 2010, 6.)

Diethylstilbestrol (DES) which is a hormonal drug for women with high chances of miscarriage given between the year 1940 to 1971 has been found to be of high risk not to the women taking drugs but the women's daughters. About 1 in 1000 of these women develop cervical cancer. Those whose mothers took the drug during the first 16 weeks of pregnancy were found to be of higher risk. The drug however no longer in use. Family medical history can be a major risk factor for any female not just those that mother's used the diethylstilbestrol hormone medication but also women whose family has a history of cervical cancer. (Herbert & Coffin 2008, 66-67.)

Chlamydia trachomatis a bacteria that infects the reproductive system is the most common sexually transmitted bacterial infection that has been found to have effect on the cervical intraepithelial neoplasia (CIN) grade 2, it is an independent co-factor to the development of cervical neoplasia meaning that chlamydia does not cause the HPV virus or cervical cancer but is a high risk in aiding its development at early stages of cervical carcinogenesis. (Lehtinen et al. 2011, 372-375.) Like most STD's chlamydia is well preventable by the use of condoms, in the case of HPV infection the use of condoms as a primary prevention strategy has been scientifically identified to be unsuccessful, however condoms are a way of reducing the risks brought about by the STD's such as HIV/AIDS, chlamydia and genital herpes which all depress body immune system increasing the risk of cervical cancer. (Herbert & Coffin 2008, 65-66.)

According to the WHO 2002 there are a total of over one thousand million smokers worldwide, though the population of developing countries smoking women is decreasing there is still a significant number still participating in the habit while in developed countries the habit continues to be more popular among the women closely getting equal to the number of men smoking. (WHO 2002.) Smoking whether active or passive has been found to be a high risk factor. A strong correlation has been found between smoking habits and sexual behaviours in social settings in many populations. Chemical substances in the cigarettes have also been detected in cervical mucus therefore aiding in the development of cervical cancer by causing damage to DNA around the cervical cells. (Özgül 2009, 349.)

Some cultural and religious beliefs that keep women away from screening programmes. An example of such communities are the Chamorro women of Micronesia who are raised with the Mamahloa religion. Which calls for a sense of shame in women in exposing anything on their sexuality or gynecological health hence keeping them away from health centers. Due to this cervical cancer has remained to be the second leading concern of death among the women of this community and the third highest behind Asian and Caucasian women. (Rosario 2011, 81-82.)

2.2 Signs and symptoms

A number of signs and symptoms of cervical cancer are associated mainly with the later stages of the infection which are CIN 3-4 but studies have also shown that about 15.7% to 32% of the women with the early stages of cervical cancer disease also have symptoms at presentation (SIGN 2008).

Some of the signs and symptoms for cervical cancer can be common to those of genital Chlamydia trachomatis infection, Post-menopausal bleeding may be a symptom of endometrial cancer and these group of women require pelvic examination during the assessment, abnormal vaginal bleeding such as inter-menstrual bleeding (IMB) or post-coital bleeding (PCB) is also a common symptom, however in women under the age of 25 years the chances of having cervical cancer when experiencing PCB is less than that of women over 35 years of age which creates higher chances (Imagines 2008.) Pain around the cervical area may be experienced during sexual intercourse. In an advanced level of the cervical cancer there is great loss of appetite, weight loss, pelvic pain, back pains and leg pain. Heavy bleeding may be experienced from the vagina, leakage of urine or even presence of faeces extracting from the vagina. In some cases there maybe bone fractures around the pelvic area. (Saonere 2010, 314-323.)

In advanced stages the woman may experience very heavy, straw.coloured, bloody strong smelling vaginal discharge that may have a mixture of blood, pulse like tissue, urine and stool that may lead to vaginal bacterial infection that produces smelly gasses. The bacteria is not completely eliminated but good hygiene can control the smell coming from the discharge, antibiotics such as Doxycycline, amoxicillin and metronidazole may be taken although antibiotics can be a further risk to acquiring funal vaginitis as a side effect. Vesico-bleeding or recto-vaginal fistula may occur in some cases. This is when a hole forms between the vagina and the bladder causing leakage if urine uncontrollably from the vagina. In some cases the hole may be between the vagina and the rectum therefore causing stool to come off from the vagina. (PATH 2003.)

This happens mostly in the last stages of the cancer and cannot be medically or even surgically corrected. Dehydration may also occur due to the excess loss of fluid from the body through diarrhea, vomiting, high fever and not feeding the body with foods or even drinks to compensate the loss. (PATH 2003.)

2.2 Screening

With approximately of 270,000 deaths with 85 percent been from developing countries, mortality increase has been identified to be due to the lack of the of efficient high quality precancer screening and treatment resources as well as poor infrastructure. (Alliance For Cervical Cancer Prevention 2009). Cervical cancer is well preventable by screening especially on women that are asymptomatic for precancerous cervical cancer lesions early detection leads to faster and more successful treatment. According to multiple studies that have been carried out women that have been screened for at least once in their lifetime between ages 30 and 40 reduce cancer risk by 25-36%. (Cervical Cancer Action 2008).

Evaluation of the alternative screening methods in screening programmes have been continuously studied to verify screening effectiveness by comparing the various screening techniques available. Performances of these screening methods are well evaluated and monitored to see if they are precise and able to correctly give effectively accurate feedback. It also helps to correctly identify the right testing ages and the suitable interval for the different screening techniques available. (Anttila et al 2006, 2.)

There has been an increase in the mortality rate among developed countries regarding cervical cancer due to the improvement of screening techniques. Unlike developing countries where there are limitations of techniques. Organized programmes have been continuously implemented in developed countries. The programmes continue to be successful due to high level of management and funding by government organizations. In some of the countries women are actively invited to participate in screening programmes. (WHO 2002.)

Despite the ongoing campaigns to create cervical cancer awareness a majority of women that go for a variety of pelvic examination or gynecological tests still tend to assume that the test automatically includes cervical cytological screening and this kind of mentality has continued to create major concerns of it being a contributing factor to cervical cancer since the women do not go for cervical cancer screening. (Fry 2010, 1715.)

A survey was done in a women's visit center where the women regularly go for urgent care, the aim of the study was to determine how much knowledge the women had on cervical cancer screening. The group of women given the survey questioners were those that spoke English and Spanish languages that came in to the center for pelvic tests. They were questioned on their general knowledge on the pelvic tests that they had come into the center to receive and also the knowledge that they had of papilloma screening. After questioning the participants were offered education about pap smears both verbally and also from scripts that were printed for them to read freely in the women's visit center, certified translators were available for clear translations for the Spanish group. The preintervention group had 382 participants while the post intervention group had 130 women of the mean age of 29.2 years. There was no major difference between the English and Spanish speaking group in age and gravidy, through a bivariate analysis there was found to be an increase in women giving correct answers to the questions as compared to the case prior to the intervention, majority of the women could tell the difference between a general pelvic test and a pap smear test. (Fry 2010,1715-1718.)

At the end of the survey 66.3% of the women felt that the exercise was helpful and educative on pap screening and its importance, this was a greater difference compared to the results from the pre-intervention group where only 33.1% of the group appreciated and saw the importance of the women learning about the pap screening. (Fry 2010,1715-18.)

Physicians and other health care workers carry the responsibility of ensuring that the patients visiting for vaccinations get the all the information available on the various kinds of screening methods available and the accessibility. There are many dilemmas that the healthcare worker in terms of suitability of screening a patient. The first is the extent of risk involved as compared to the benefit of the screening. Cervical cancer screening can be a state that can cause psychological harm to the patients due to anxiety, false positives can cause one to have distress and while undergoing unnecessary treatments. To reduce this anxiety the patient needs to be taken through the different methods available as well as the process by which the screening methods are undertaken, patients should be allowed to participate in the decision making on the method to be undertaken. Medical workers should also assess the social-economical state of a setting before they can decide on the screening method that they can recommend for their patients. This is because the screening methods vary in affordability and maintenance of equipments and therefore causing the screening methods to be expensive. If the methods are too expensive then the women that cannot afford the screening will not attend the screening programme. Women also need to know that as they visit their physician or healthcare worker, they can trust that their visit would be kept confidential. It is therefore the ethical duty of the healthcare worker to ensure that autonomy is maintained for every one that visits for screening. Maintaining the trust of a patient keeps a close relationship through test and possibly treatment of the patient. As mentioned before cervical cancer is a sensitive illness that most women do not feel comfortable to discuss with everyone and therefore seek confidence of their healthworkers. (Snadden 1992, 331-333.)

Exfoliative cervicovaginal cytology; Also known as the pap smear screening technique or conventional cytology screening it has been used from as far as 1927 when papanicolau was introduced and has for many years been in use. In this technique pap smear collection is obtained from the cervix and the endocervical canal by the use of an Ayre spatula and ctyobrush. Samples taken are then smeared on a slide which is then fixed with cytology fixative. The inaccuracy of this tests is about 5% to 10% cases which has been related with wrongfully taking the sample due to poor technic of sample collection, in some cases not all the sample collected is transferred to the glass slide , in some situations only 20% of the collected sample is possible to transfer. Sensitivity of the pap smear test is rated at 55-60% and in epidemiological data reports suggests that it is unlikely to detect 60% of the general cervical cancer cases. (Kerker 2006,115-122.)

Pap smear screening has proven to be the most successful method of detecting cervical cancer and has helped in decreasing morbidity and mortality brough about by cervical cancer. However about 30% of the results have errors which occur as a result of mistakes like incomplete sampling of the transformation zone or the cytotechnologist failure to detect presence of abnormal cells on a slide, one way by which this risk of errors has been to reduce the workload of the cytotechnologists who screen a maximum of 100 slides a day. (Nouvo 2001, 780-786.)

Liquid based cytology; Sample collection method is similar to that of the conventional pap smear method although a special sample collecting device that collects exfoliated cells from transformation zone of the cervix. (American collage of obstreticians 2009). The device is placed in a vial that contains preservative that contains hemolytic and mucolytic agents. In this technique there is even distribution of cells with reduced cellular debris and RBC's in the sample, this has highly decreased the incidents of positive false diagnosis of cytological atypia and is better at detecting squamous abnormalities. (Kerka 2006, 115-122.)

United states survey of 2003 indicated that the liquid based cytology (LBC) technique was found to be more commonly used compared to the pap screening technique with over 90% of obstetrician-gynecologists and physicians preferring it to pap smear screening. Nationally representative studies showed that among outpatients visitors between 2006-2007 an approximate of 70% were tested using the liquid based cytology making it the most common method of screening presently. In spite of its popularity there have been no differences spotted between LBC and pap smear techniques in terms of specificity and sensitivity, however the ease in interpreting microscopic readings measures as an advantage with the LBC. (Hing 2011, 2-8.)

Visual screening; This type of screening involves direct inspection of the cervix without taking of samples and although it is less tedious in terms of preparation and inspection it is considered to be less accurate in identifying precancerous conditions. However with the use of acetic acid (vinegar) the precancerous cells temporarily turn white when exposed to the solution therefore making it easy to identify them. In other cases iodine-based solution is used which turns normal cervical cells brown and the abnormal cells remain yellow or unstained making them clearly visible. This has made Visual inspection with added solutions is quite reliable in its use as compared to pure visual screening without use of any agent. Visual inspection with acetic acid (VIA) is suitable for its cost effect since it requires low resource settings low launching and sustaining. Non-physician can use this procedure with basic training. (PATH 2000.)

In Kerala, India a study was done to evaluate visual screening as a screening method. The study was carried out and recommended for 30 years old and above women never the less younger women that showed up were also tested. Routine cytology screening was done in direct comparison to the visual screening method on all of the 2843 participants. Visual inspection was carried out with use of a kusco's self-retaining speculum under with adequate light from electric lamp without the use of magnification. Appearance was recorded in categories as unhealthy, prolapse, bleeding on touch, suspicious growth or ulcer and hard, indurated, irregular, oedematous cervix. For those found with none of the signs were considered normal while those with one or more abnormalities were said to be at high risk of cancer. Cervical smears were also taken from each participant using a wooden Ayre's spatula, the smears were fixed with ethyl alcohol and stained by use of papanicolau technique. Findings were classified as normal, inflammatory, infection, mild dysplasia, moderate dysplasia, severe dysplasia, carcinoma in situ and invasive cancer. Results from the visual inspection showed that 1564 (55%) of the women had normal looking cervixes, 1100 (38.7%) appeared to have low-risk findings and the rest 179 (6.3%) had high risk categories therefore being considered to have a positive visual screening test result. Results from cytology revealed that 178 (6.2%) had mild dysplasia, 10 (0.4%) had moderate dysplasia, 7 (0.2%) had severe dysplasia and 22 (0.8%) had either carcinoma in situ or invasive cancer. From this study there were concerns that there might have been some false readings in the visual inspection method although the cytology method has also been in previous studies been questioned in its validity too although in this study that was not of much consideration. In the visual inspection, use of the acetic acid impregnation in the cervix improves objectivity and performance of unaided visual screening method by helping clear visualization of the cervix also known as cervicoscopy. This helps to clearly detect dysplasia that could be missed by cervical cytology. (Wesley 1997,436-440.)

A study from Italy clearly indicated that cervicoscopy has high sensitivity in detecting high grade lesions than pap smear method although it has poor specificity. In spite of the shortcoming due to the capability of visual inspection method sensitivity it can be merited as a usable screening method. (Wesley 1997,436-440 ; Cecchini et al 1993.)

In order to ensure continuity and efficiency of the VIA as a screening method some policies may be used to guideline the implementation of the method. This includes broadening of the guidelines in order to ensure that even non-physician health care providers for example nurses and midwives can easily learn how correctly observe and give accurate results. Adequate and regular training needs to be available for these healthcare workers in this way they can maximize their skills in performing the VIA test as well as correctly classifying their findings. Performance of the VIA methods requires to be constantly monitored on its performance and advanced in order to ensure that channels of improvement are well utilized to enrich the quality of the screening method so as to reduce cervical cancer cases. (PATH 2000, 15-18.)

HPV DNA Screening; Aimed at detecting high risk HPV types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 59 and 68 which are often associated with high grade cervical intraepithelial neoplasia (HSIL) and invasive cancer in the cervix. Technics available in this method of screening include southern blot hybridization which is said to be a laboratory gold standard. It is however labourious and tedious and not very suitable for clinical use because it demands for use of fresh tissue which is not easy to conduct especially in mass screening programmes. A more suitable technic has been use of Hybrid capture 2 assay which is mostly used in HPV DNA screening. Samples for the screening are obtained from cell suspensions acquired from liquid based cytology or use of the cytocervical brush (Kerkal & Kulkarmi 2006, 115 - 122.).

In the laboratory the cellular DNA is first denatured and mixed with ribonucleic acid probe, the DNA “hybrid” is then captured by antibodies which coat the sides of the tube after which a chemical which causes chemoluminescent reaction is added, amount of light measured is what is used to determine presence of HPV and its viral load. (Novo et al 2001, 780- 786.)

The Bethesda system which was initiated in 1988 and reviewed in 2001 is a guideline used alongside the HPV DNA test, it was made to identify precancerous lesion in the cervix but is now also used in detecting and treating of high grade cervical intraepithelial lesions (HSIL). For women with Atypical squamous cells of undetermined significance (ASCUS) the HPV DNA test is found to be more sensitive in detecting appropriate triage of women about 31% to 60% of the women with ASCUS test positive for high risk HPV DNA. Women tested positive are referred to coloscopy, about 98% of the women found to have negative results are reliable and reassuring to the patient. (Kerker & Kulkarni 2006, 118.)

In a study trial was carried out on women from of ages 30 to 60 years in southern Finland between the year 2003 to 2005, a total of 58 076 women were invited for the routine population based screening programme for cervical cancer. The study was done to determine which method of testing for cervical cancer is better, the conventional cytology screening method or pap smear screening was compared against the HPV DNA test screening method. In both arms samples were obtained from a VCE smear which consist of vaginal, cervical and endocervical samples taken with cytobrush from the junction and endocervix and with two spatulas from ectocervix and vaginal fornices. In the results the HPV DNA screening had more positive readings of any CIN or cervical cancer than the conventional cytology screening, clearly identifying the HPV DNA test to be more sensitive especially in detecting CIN grade 3 and above. The women found to have positive HPV test results were recommended for intensive screening. (Anttila et al 2010, 1804.)

Despite the good results found with the HPV DNA test compared to the conventional test the HPV DNA test does not indicate who needs immediate confirmation and treatment. When HPV DNA test is positive cytological information is needed to confirm who needs a colposcopic examination in order to avoid unnecessary colposcopic examination. Treatment of a patient is therefore determined by the histological confirmation which is obtained from colposcopy directed biopsies and treatments done with the help of colposcope. The pap smear is can also used a triage for positive HPV DNA test so as to clearly define if the patient needs colposcopy. (Anttila 2006, 1-8.)

Screening in Finland; The Finnish cancer registry is responsible for inviting women for the cervical cancer screening programme which has been the leading method by which the cervical cancer cases have been lowered in number by way of early detection and prevention. Municipalities in Finland have the responsibility to carry out the invitations in the primary health care centers where trained nurses or midwives can take the screening samples. Women at the age of 30 to 60 years old are invited for the screening in intervals of five years, in some municipalities however the screening invitations age starts from 25 to 65 years. Approximately 250,000 women are invited for the screening and of this 200,000 women attend. About 600 cervical intraepithelial lesions (CIN) are diagnosed through the programme and 200 deaths are prevented annually. Mortality rate has decreased by 80% from the baseline. Approximately 50 to 70 deaths caused by cervical cancer. (Finish Cancer Research 2010).

Results from the year 1963 indicated a mortality rate of 15 per 100,000 women which has decreased to 4 per 100,000 women from results indicated in 2007, however incidence of cervical cancer have increased especially among young women, this increase had been due to the large increase in sexual behaviours and smoking in the recent decades (Van der Aa et al 2007,8).

In 2003 results given by the Finnish mass screening registry reported less than 60% of the women between the age of 40 years that were invited for the screening programme attended and about 20% of those aged 25- 30 years of age invitees attended which was an evident indication of how the continuous ignorance of the people contributes to the increase in cervical cancer that the country work so hard to eliminate. (Harper 2010, 594-595.)

2.3 Vaccines

There are two types of vaccines that have been produced and approved for use. These vaccines are Gardasil which was approved by food and drugs administration (FDA) produced by (Merixk,white house station,NJ) the other one was Cervarix produced by (Glaxo smithkilne,Philadelphia,PA) and is now approved in Australia and europe with continous evaluation under the FDA. (Godrey J.R. 2007,139-1401.) The vaccines are both administered as prophylactic vaccines which means they are specially made for preventing against possible HPV infections as opposed to acting as therapeutic vaccines which treat acquired infections. For a person to be well protected they have to be administered with the three dose series. (National Centre For Immunisation Research & Surveillance 2010). Adolescent girls that have been vaccinated should also attend screening programmes when they are of age since the vaccines cannot protect about 30% of the HPV types therefore the need to monitor their status. (Jermal et al. 2011,79.)

Gardisal; The drug is made from composition of L1 protein of HPV types 6,11,16 and 18 which are combined with an aluminum adjuvant. It is a prophylactic drug meaning that the main aim is to prevent infection of HPV virus. Three dose series are administered recommended for females at the age of 11-15 years of age, however it can be administered to girls as young as 9 years old. Effect has been found to be 100% effective in preventing cervical intraepithelial neoplasia 2 and 3, and also adenocarcinoma in situ. It is 98% effect on types 6 and 11 and finally 100% effective on types 16 and 18 therefore preventing vulval intraepithelial neoplasia. The vaccine is best effective if the patient was not infected with any of these HPV types prior to the vaccine administration. (Pallecaros 2007, 541.) Gardisil dose which is administered in three doses, it is given in 1.5ml dosage intramuscularly. It can begin from the age of 0,2 and 6 months. The second dose can be administered after one month of the first dose. The final dose is given atleast 3months after the the second dose. (NCIRS 2010.)

Cervarix; Combinations used to manufacture cervarix drug are virus-like particles of major capsid L1 protein of HPV types 16 and 18 mixed with AS04 adjuvant system which contain 3-O-desacyl-4, monophosphoryl lipid and aluminum hydroxide salt. The drug was first introduced by Medimmune in 1998 and after a number of trials it was approved by the FDA in march 2007. It is intended for young women between the ages of 10-15 years of age in order to prevent cervical cancer, CIN 2 and CNI 1 which are caused by HPV types 16 and 18..Cervarix was approved in the European union for use in females by determination of efficiency to those aged 15 to 25 years and those by determination of immunogenicity ages 10-25. Up to date the vaccine is licensed in more than 95 countries all over the world among these it is used in 27 European countries including Finland. (VRSPAC 2009, 14-16.)

So far studies on cervarix vaccine have been done up to three phases and an ongoing fourth phase is in place in Finland where a target of 70,000 adolescents aged between 12-15 years of age. About 30,000 of the adolescents will receive the vaccine which will help to evaluate the safety and effectiveness of the vaccine against HPV virus. Another trial is in place in the US where a total of 50,000 women vaccinated with cervarix vaccine will be observed for any autoimmune disorders or occurrence if any abnormalities in pregnancy for those vaccinated. (VRBPAC 2007, 19.)

Vaccine clinical trial; In another article by Godfrey (2007, 139-1401). Harper discussed a research that was done on the vaccines that are currently produced and the effectiveness in prevention of the cervical cancer. Two groups of women at the age of 15 - 26 years were administered with three doses of the approved vaccines, the Future 1 group who had not been infected with cervical cancer were prior to the vaccination found to have been well prevented from cervical lesions (CIN-1, CIN-2 and CIN-3 and also adenocarcinoma in situ which are caused by HPV 6, 11, 16 and 18. The vaccine was found to last for at least 3 years. Future 2 who were a similar group as the first in age group and had no infection of HPV 16 and 18 previously were found to be completely immune from CIN-2, CIN-3 and adenocarcinoma in situ caused by the types 16 and 18. The vaccine lasted 3 years. The future 1 the vaccine was found effective by 98% accuracy for women that had never been infected with any of the mentioned types of HPV while its effectiveness decreased to 55% in women that have had infection prior to the vaccination. In the Future 2 the vaccine was found to be 95% effective in women never infected with the types HPV virus 16 and 18 while the effectiveness reduced to 44% in those infected with the virus at the time of vaccination. From these trials a recommendation for women sexually active was made as well as middle school girls even if they are not yet sexually active, although this brought controversy that the girls maybe too young to this kind of exposure but it is necessary to reduce the rate of cervical cancer by creating awareness. Even though the vaccine is not yet 100% assured protection, studies are still being done to improve the vaccines, regular screenings go a long way in knowing one's status. (Godfrey 2007, 139.)

Both doses are usually administered in three doses each containing 0.5 ml intramuscular injections in a period of six months. Patients injected with the vaccines experienced some adverse events on the injection sites such as pain, erythema and oedema but no serious problems were experienced. Women that had not had past HPV genotype infections prior to the vaccine were found to have 90% protection. The vaccines cannot protect against existing HPV infection therefore it is best administered before a woman is sexually active which in some cases is girls from the age of 11 to 13 years. (WHO 2007, 7-11.)

2.4 Treatments for cervical cancer

Cervical cancer is curable if detected and treated at an early stage, about 80% of those detected at the early stage are cured with suitable treatments. In developing countries cervical cancer's are often diagnosed at very late stages due to the poor or even lack of good screening and treatment methods as opposed to the developed countries that have continuously been able to detect and treat early stages of cervical cancer mostly in the precancerous stages. (ACCP 2004.)

Some treatments that are used in developing countries include cryotherapy which involves the use of extremely low temperatures that destroy the abnormal tissues. This method does not require electricity therefore making it a cheap affordable method that can be used by low-income states. Loop electrosurgical excision procedure (LEEP) is another method that involves use of thin wire in removal of affected parts, although slightly more expensive than cryotherapy, LEEP has better performance since it allows extractions of tissues for biopsy to allow further investigations and reducing possibility of advanced cancer. (Ashford 2005, 3.)

In different countries studies have been done on the success of screening and treatment of cervical cancer, more diagnosis of early stages are being detected due to the females willingness to voluntarily participate in the screening process. The table 2 below describes some of the countries participation in studies and the outcomes in relation to early stage detection. The outcome was also affected by the population factor as well as developmental states of the countries. (ACCP 2004.)

SEE TABLE 2

Table 2. Cases of cervical cancer in develop and developing counties. Source; ACCP 2004, 212 . http://www.rho.org/files/ACCP_mfm.pdf. Updated 2.5.2011

| country | period of study | womenwith cervical cancer | Women with ealy stage(localized cancer |
|---------------------|-----------------|---------------------------|--|
| Cuba | 1988-89 | 831 | 24,1% |
| Mumbai,India | 1982-86 | 8,861 | 11.7% |
| Chennai,india | 1984-89 | 6,141 | 6.8% |
| Rizzal,philippines | 1987 | 937 | 5.2% |
| Chaing Mai,Thailand | 1983-92 | 3,231 | 20,7% |
| Kampala,Uganda | 1995-97 | 261 | 14.6% |
| Seer,USA | 1992-98 | 7,594 | 54,0% |

Previously early stage cervical cancer was treated radically through radiotherapy or radical hysterectomy, every five years the survival rates were placed at about 80-90%. Radiotherapy is the external beam and intracavity treatment. In 1999 a National Cancer Institution recommended that radiotherapy should be used alongside chemoradiation for women with advanced stages of cervical cancer, this was based on five randomized trials that showed evidence of better survival with progressive cancer free survival. (Tierney 2009, 8.)

Surgery may be recommended for small tumors in the cervix especially when the patient has no sign of metastasis in the lymph node. Some of the surgical procedure are like hysterectomy that was mentioned earlier. This is a surgical procedure that involves removal of the uterus, there are two types of hysterectomy namely simple hysterectomy that involves removal of the uterus and the cervix. the surgery is done laparoscopically and takes a very short time of recovery with one to two days of hospitalization. Radical hysterectomy involves removal of the uterus and about two centimeters of the upper vagina and soft tissues around the cervix, the procedure may be done laparoscopically therefore taking less recovery time but may cause some effect on the bowel and bladder function. After radical hysterectomy a patient is hospitalized for at least 6 weeks with a urine catheter and an abdominal drainage which are removed three to five days after operation, the patient should not have sexual intercourse until atleast six weeks. Pain relief medication can be administered for pain management. (National center for gynecological cancer 2010, 3-6.)

Like hysterectomy radical trachelectomy is surgery that captures the early stages IA1, IA2 and IB1, as opposed to hysterectomy, trachelectomy is done with the aim to preserve fertility therefore suitable for young women. In advanced stage treatments one of the treatments methods used is intracavitary brachytherapy where radioactive sources are placed close to the targeted tumor. This dose can decline rapidly beyond the tumor therefore stopping further growth of the tumor towards the bladder and rectum. (Long et al 2007, 1570.)

3 PURPOSE AND AIMS

Purpose of this Bachelor thesis to create cervical cancer awareness on tests and vaccines available in Finland. The aim is to produce a webpage on terveystieto which is for patient education where patients can easily access understandable information that they can refer to for further knowledge on cervical cancer.

4 IMPLICATION OF THE PROJECT

This bachelor's thesis has been collectively written to target the community especially the female gender of all ages. The goal is to create awareness on cervical cancer to the women that have not heard of it and those with miss information on its nature.

Through the terveystieto which is an internet page set for the public use in salo community to educate them on various health concern issues, the readers will be able to access information on cervical cancer mainly focusing on different methods of screening and vaccines prevent to fight the HPV infection.

This works as an empowering tool for the women to self educate themselves at the comfort of their settings.

Women may not be able to voluntarily visit health centers seeking information on cervical cancer. Information that will be provided in the terveystieto webpage will be set out to empower the women with this information easing the discomfort by giving the basic information eliminating the fear to visit the topic of cervical cancer with their physicians and although physicians empathize with the patient's concerned they struggle to find ways to reach out to the reach out the women. (Hill et al. 2011, 2645.)

5 HEALTH EDUCATION

Patient education is a process that influences a patient's behavior providing knowledge, attitudes and skills that are necessary for the patient to improve their health. Providing education empowers the patients with complete and current information which helps create a sense of trust towards health workers which help them create a self will for better life health related choices. (American academy of family physicians 2008, 1-2.)

Cervical cancer has been the leading deadly cancer in developing mainly as a result of lack of organizations for screening programmes. Research has continuously proven that women with knowledge on cervical cancer respond positively to the great need for screening. In Honduras a developing country incidents of cervical cancer are 39,6/100 000 which is four times the number in the United States which shows how greatly education on cervical cancer goes a long way. (Perkins 2007, 187-193.)

According to many studies that have been carried out it was found that the more knowledge women had on cervical cancer and importance of screening the more likely they were to visit the screening center as opposed to socioeconomically challenged women that had insufficient knowledge on abnormal pap test results and the need for continuous follow-ups such as coloscopy. Women tend to identify pap test as a test for sexual disease that one should inform her partner on her abnormal result as is the case with STDS such as HIV/AIDS, this clearly indicates the poor knowledge of the relation between sexual behaviours and the HPV virus. (Radecki 2005, 78-84.)

With cervical cancer records still globally high, in 2005 was recorded a total of 260,00 cervical cancer deaths with 95% of these from developing countries. This great bridge of difference between developed and developing countries has been among other reasons due to lack of cervical cancer awareness in communities and also in their healthcare system. (Nnodu et al. 2010, 96-98.)

Women that get positive HPV test results respond with anxiety and usually have a sense of guilt and shame due to the fear of the stigma that comes with sexually transmitted infections. (RCN 2006, 3, McCaffery 2003). This kinds of fears of judgement come from the women lacking clear information on the difference between HPV high risk infection and wart virus and the also HPV infection's relation with cervical cancer. Healthcare educators are responsible to provide this education and are trusted to give accurate information, this helps women evaluate their status well reducing anxiety. (RCN 2006, 4.)

6 ESTABLISHING WEBPAGES

The web is in the recent days used for information and also for disseminating of information both public and private organizations worldwide. (Gullikson 1999, 293). Educators and student especially rely on the educational webpages for information therefore it is important to have credible resources that can be trusted with suitable truthful in data. Educators focus on audience, credibility, accuracy, objectivity, coverage and currency in choosing a well suitable webpage. (Boklaschuk 2001, 2-3.)

Impact of the webpages on its users is therefore important and visual appearance of the web page design is always a prior determinant of whether the user are interested in using the page. Although a major determining factor other factors falls in place such as the utility of the page which is the ability of the web site serving intended purpose to the users by giving suitable and correct information. The third important factor is usability of the page for the users, it should be easy and navigate. (Gullikson 1999, 293-296.)

Webpages are to be established obtain retrieved information from this bachelor of thesis research work. The webpages are intended for the terveystietä which is a page targeting the public net users developed by the Turku university of applied sciences in collaboration with the salo city hospital in order to inform and educate the society. Group targeted mostly for this study webpages are mainly women both older married women as well as young women that are at their sexual active stages. The webpage may also be useful in giving information to men that may probably have women close in their lives that may be going cervical cancer and may wish to be more informed on it but feel intimidated to voluntarily ask medical health workers information. (Hill et al. 2011, 2645.)

The information in the webpages like in the bachelor thesis has information of the screening methods that are available for cervical cancer as well as the up to date vaccines that are currently approved and available against cervical cancer. Just like in the bachelor's thesis some information has also been mentioned about available treatments.

The language used in the webpages is English, this language was selected since it is the main language that has been used in writing the bachelor's thesis paper, therefore tranferation of information from the paper to the webpages is easy and direct. Simple vocabulary has been used in the webpages to ensure that users are easily able to understand the information. This information may also in the future be translated into various languages including finnish in order for a wider range of readers to be able to read the data if they do not understand English.

7 DISCUSSION

7.1 Reliability and validity

Consistence in information borrowed is essential while taking on literature review. The information given in this paper is a direct reflection on the articles that have been reviewed and used (Golafshani 2003,598.) Majority of these articles are peer reviewed articles meaning that they have been studied and approved by academic critics therefore making can be considered suitable for use. Keywords were used constantly in the search in order to ensure that relevant information found was in direct relation with the topic as well as the subtopics, it also aided in simplification and narrowing down of articles ensuring that the best articles were selected.

The research done measures truly in accordance to its intended purpose and also on the truthfulness of the research. (Golafshani 2003, 599.) Information provided in this bachelor's thesis is in accordance to the set purpose and aims and sufficient concentration has been placed on the test and vaccines for cervical cancer ensuring that there is no diversion of interest.

7.2 Ethical consideration

Personal views and opinions were not used in the bachelor's thesis literature review avoiding any bias opinions in the content provided. Information borrowed from various articles clearly reflects information as the authors intended to portray without plagiarism. This means that even though the information is similar to that of the found in the literature sources used but none of this information nor diagrams have been copy pasted directly from these articles. (Howe & Moses 1999, 21.)

Data used was from articles that were written under diverse cultures and academic institutions as well as independent organizations. This has therefore helped in maintaining diverse community study of cervical cancer and preventing segregation of stigmatization of a different kinds of communities and groups of women. With the knowledge that cultural barriers are present in many communities it is important to know how to break down the walls of ignorance without causing conflict in the societies or problems to the women. (Coughlin 1998, 112.)

7.3 Limitations

Limitations were sighted in the study and collection of data from this bachelor's thesis paper. Some of the limitations involved method of research that was in use. Articles collected for use were randomly selected by use of keywords in many different webpages and also use of advanced google. By use of this method it is more than likely that although articles selected and used were suitable, so many more articles that may have been suitable were not found or ignored in the search. Some articles that were also found were in abstract form and could not be found in full text therefore being set aside and not included in the paper. Language was also a barrier in the use of some of the articles found since they were in different languages other than English language therefore were dismissed and not used in the study.

This bachelor of thesis paper was mainly focused on screening techniques for cervical cancer and vaccines available as was the aim project therefore little information was mentioned on treatments available. This may fall as a limitation for a reader that may be seeking information on the treatments.

The topic was fairly wide and therefore demanding summary of information collected. In this process important information may have been left out causing a shortback in the work. Too much sieving of information may also have led to omission of relevant and maybe necessary information.

7.4 Conclusion and recommendation

HPV virus is the leading risk for cervical cancer and the choice to go or not to go for cervical cancer screening is a leading factor to the survival rate of the human race and especially the female gender. A variety of cervical cancer screening techniques have continued and are continued to be introduced and modified in order to be able to successfully trace risky HPV types such as types 16 and 18. Pap smear screening is the most common method of screening but it has been seen to have some loopholes therefore the need for the creating new methods of screening which have been mentioned in this study. (Kerker 2006,115-122.)

To enable the fight against cervical cancer countries need constant running programmes that aid in the initiation and funding. Most developing countries have these kind of programmes already running and are managed by the major health institutions and funded by the states. However in some countries especially developing countries where there is poor infrastructure external donors step in to fill in the void. (Collymore & Ashford 2005, 2-5.)

Alliance of cervical cancer prevention which was started in 1999 to assess and promote prevention of further spread of cervical cancer is one of these nongovernmental international organisations. The ACCP projects have worked over the years towards introducing good quality affordable screening methods for the women in the developing countries. The aim of the projects is usually to use local understandable messages for the local women in order for them to understand the great need to participate in the screening, the targeted group of women for the ACCP screening project are those in their 30s and 40s who are screened for abnormal cells. Health centers are opened up for outpatient visits as well as information centers for women that want to know more on HPV virus. (ACCP 2005.)

Other organizations that have continued to work independently and alongside ACCP are the Program for Appropriate Technology in Health (PATH) and the World health organization (WHO). A group of many organisations came together in 2007 to create the global coalition to stop cervical cancer named the cervical cancer action (CCA) the organization aim is to “expedite the global availability,affordability and accessibility of new and improved cervical cancer prevention technologies to women in developing countries.” (Cervical Cancer Action 2007.)

Female morbidity and mortality have significantly decreased in the period of time showing evidence of success in the programmes that have been created under the alliance for cervical cancer as well as working independently. (Cervical Cancer Action 2007). However there is still a long way to go as so many populations have not yet been reached and still the fear of women especially those tied by culture and religion felt they do not want to go into the health clinics to consult on the disease or have screening even when the facilities are made available to them. (ACCP 2004, 3.)

Women need to step up to the challenge and participate in the screening programmes closest to them for monitoring and also play a role in creating awareness to those around them. With this cases of cervical cancer will significantly increase the interest among th population and decrease incidents.

In developed countries the change of lifestyle remains one of the big concerns, although the tests and vaccines are available many have chosen to ignore the risk that HPV infection holds and instead on engaging in the same habits that post the risk. This can be changed by beginning to change these attitude by educating the women on the importance of preventing the HPV virus . (Bingham et al. 2003, 410.)

Cervical cancer is considered to be a sexually transmitted condition but it is important for one to understand that other sexually transmitted agents are the ones that contribute to the growth of the HPV virus such as sexually transmitted diseases for instance chlamydia, HIV virus, herpes simplex virus type 2 and other organisms that cause bacterial vaginosis. Although these infections can be prevented by use of condoms the HPV virus cannot be prevented in by use of condoms but by the ensuring that one is sexually responsible by maintaining the same sexual partner and also attending the cervical cancer screening programmes as advised by the physician. (Stone et al. 1995, 409.)

SOURCE MATERIAL

Alliance for cervical cancer prevention. 2004. ACCP strategies for supporting women with cervical cancer. Cervical cancer prevention issues in Depth No 2, 7 Consulted 5.08.2010

Alliance for cervical cancer prevention 2009. New evidence on the impact of cervical cancer screening and treatment using HPV DNA tests, visual inspection, or cytology; Cervical cancer prevention fact sheet. 2009, 1-3. Consulted 2.5.2011

http://www.rho.org/files/ACCP_mfm.pdf

American academy of Family physicians. 2008. Patient Education: Recommended curriculum guidelines for family medicine residents. 284/2008, 1-2. Consulted 30.09.2011

American collage of obstetricians and gynecologists. 2009. Clinical management guidelines for obstetricians-Gynecologists. 109/ 2009. Consulted 8.5.2011

American Cancer Society. 2010, 1-9. Cervical cancer. Consulted 2.05.2011

<http://www.cancer.org/acs/groups/cid/documents/webcontent/003094-pdf.pdf>

Anttila, A.; Katoniemi-Talonen, L.; Lainonen, M.; Hakama, M.; Laurila, P.; Tarkkanen, J.; Maila, N. & Nieminen, P. 2010. Rate of cervical cancer, severe intraepithelial neoplasia and adenocarcinoma in situ in primary HPV DNA screening with cytology triage; randomized study within organized programme. BMJ journal 340/2010, 1804. Consulted 27.04.2011

Anttila A. 2008. Alternative screening methods within the organized screening programme for cervical cancer Finland. Mass screening registry, Finnish cancer registry. Consulted 10.05.2011

Anttila, A.; Hakama, M.; Kotaniemi-Talonen, L. & Nieminen, P. 2006. Alternative technology in cervical cancer screening: a randomized evaluation trial. Biomed central public health journal Vol. 6 No. 252/2006, 1-8. Consulted 10.05.2011

Ashford, L. & Collymore, Y. 2005. Preventing cervical cancer worldwide. Population Reference bureau. Policy brief. Consulted 6.8.2011 http://www.prb.org/pdf05/PreventCervCancer-Brief_Eng.pdf

Bingham, A.; Bishop, A.; Coffey, P.; Winkler, J.; Bradley, J.; Dzuba, I. & Agurto, I. 2003. Factors affecting utilization of cervical cancer prevention services in low – resource settings. Salud publica de mexicana Vol. 45 No. 3, 410.

Boklaschuk, K. & Casse, K. 2001. Evaluation of Educational websites. EDCMM 802.6/2001. Consulted 20.10.2011

<http://www.usask.ca/education/coursework/802papers/bokcaille/bokcaille.pdf>

Cancer Research UK (CRU) 2008. Treating cervical cancer – A quick guide. Consulted 9.6.2011

http://www.cancerhelp.org.uk/prod_consump/groups/cr_common/@cah/@gen/documents/generalcontent/treating-cervical-cancer.pdf

Castellsague, X.; Bosch, X. & Munoz, N. 2003. The male role in cervical cancer. Salud publica de mexico. Vol. 45 No. 3,346.

Cervical cancer Action. 2007 New options for cervical cancer screening and Treatment in Low-resource settings. Consulted 9.6.2011

http://www.cervicalcanceraction.org/pubs/CCA_cervical_cancer_screening_treatment.pdf

Cecchini, S.; Bonardi, R.; Mazzotta, A.; Grazzini, G.; Lossa A & Ciatto, S. 1993. Testing cervicography and cervicoscopy as screening tests for cervical cancer. Tulnori 79, 22-25. Consulted 3.10.2011

Collymore, Y.; Ashford, L. 2005. Preventing cervical cancer worldwide. Population reference bureau. Policy brief. Consulted 9.6.2011

http://www.prb.org/pdf05/preventcervcancer-brief_eng.pdf

Coughlin, S. S. 1998. Cancer prevention and control research among Houma Indian women. Ethics in epidemiology and public health practices: collected works. Library of congress catalog. No. 97-75537, 111. Consulted 6.10.2011.

Data, S. D.; Koutsky, L. A.; Ratelle, S.; Unger E. R.; Shlay J.; McClain, T.; Weaver, B.; Kerndit, P.; Zenilman, J.; Hagnese, M.; Suhr C.J.; Weinstock H. 2008. Human papillomavirus infection and cervical cytology in women screening for cervical cancer in the United States, 2003-2005. Journal of Ann med. Vol. 148, 493-500. Consulted 12.01.2011

Fry, M.; Ferries-Rowe, A.; Learman, L. & Haas, D. 2010. Pap smear versus speculum examination; can we teach providers to educate patients? Department of obstetrics and Gynecology, Indiana University school of Medicine, Indianapolis, Indiana. Journal of women's Health Vol. 19 No. 9,1715-1719. Consulted 14.01.2011

Godfrey, J. 2007. Towards optimalHealth, Diane M.Harper, M.D., M.S., M.P.H. Discusses the HPV vaccine and prevention of cervical cancer. Journal of women's Health Vol 16 No 10,139-1401. Consulted 14.01.2011

- Golafshani, N. 2003. Understanding Reliability and Validity in qualitative research. The quality report Vol. 8 No. 4,597-609. Consulted 30.9.2011.
- Gullikson, S.; Blades, R.; Bragdon, M.; McKibbin, S.; Sparling, M. & Toms, G. 1999. The impact of information architecture on academic site usability. The electronic library Vol. 17 No. 5, 292-296.
- Harper, D.M.; Nieminen, P.; Paavonen, J.; Lehtinen, M. 2010. Cervical cancer incidence can increase despite HPV vaccination. The lancet infectious diseases Vol. 10 No. 9, 594-595. Consulted 7.04.2011
- Herbert, J. & Janis, C. 2008. Reducing patient risk for human papillomavirus infection and cervical cancer. Journal of the American osteopathic association Vol. 108 No. 2, 65-70. Consulted 9.5.2011.
- Hing, E.; Saraiya, M. & Roland, K.B. 2011. Liquid-based Cytology Test use by office-based physicians. United States, 2006-2007. National Health Statistics. 40/2011, 2-8. Consulted 9.5.2011
- Hill, E. K.; Sandbo, S.; Abramsohn, E.; Makelarski, J.; Wroblewski, K.; Wenrich, E.; McCoy, S.; Temkin, S.; Yamada, D & Lindau, S. T. 2011. Assessing gynecologic and breast cancer survivor's sexual health care needs. American cancer society Vol. 117 No. 12, 2643-2651. Consulted 9.5.2011
- Howe, K. & Michele, M. S. Ethics in education research. Review of research in education Vol. 24, 21. Consulted 6.10.2011
- Imaginis. 2008. cervical cancer –Risk factors and symptom. The women's Health resources. July 2008. Consulted 9.05.2011 <http://www.imaginis.com/cervical-cancer/cervical-cancer-risk-factors-and-symptoms-2>
- Jemal, A.; Bray, F.; Center, M; Ferlay, J. Ward, E. & Forman D. 2011. Global cancer statistics. CA; A cancer journal for clinicians Vol. 61 No. 2, 61-90. Consulted 9.5.2011.
- kerkar, R. and Kulkarni, Y. 2006. Screening for cervical cancer: an overview. Journal of obstetric and Gynecology of India. Vol. 56 No. 2, 115-122. Consulted 9.5.2011
- Lehtinen, M.; Ault, K.; Lyytikäinen, E.; Dillner, J.; Garland, S.; Ferris, D.; Koutsky, L.; Sings H.; Lu S.; Haupt, R. & Paavonen J. 2011. Chlamydia trachomatis infection and risk of cervical intraepithelial neoplasia. Sexually transmitted infections. BMJ Journal Vol. 87, 372-376.
- Likes, W. & Itano, J. 2003. Human papillomaviruses and cervical cancer; not just a sexually transmitted disease. Clinical journal of oncology Nursing, USA Vol. 7 No. 3, 271-306
- Long, J.H.; Laack, N. L. & Gostout, B.S. 2007. Prevention, diagnosis and treatment of cervical cancer; mayo clinic proceeding Vol. 82 No. 12/2007, 1567-1570.

McCaffrey, K.; Forrest, S.; Waller, J.; Desai, M.; Szarwski, A. & Wardle, J. 2003. Attitudes towards HPV testing: a qualitative study of beliefs among Indian, Pakistani, African – Caribbean and white British women in the UK. *British journal of cancer*. Vol. 88 No. 1, 42-46.

National centre for Immunisation Research & Surveillance. 2010. Human papillomavirus (HPV) vaccines for Australians: Information for immunization providers. Consulted 9.6.2011 <http://www.ncirs.edu.au/immunisation/fact-sheets/hpv-papilloma-virus-fact-sheet.pdf>

National center for gynecological cancers. 2010. Treatment for cervical cancer; cancer Australia, pg 3-6.

Nnodu, O.; Erinosh, L.; Jamda, M.; Olaniyi, O.; Adelaiye, R.; Lawson, L.; Odedina, F.; Odumuh, T.; Isu, N.; Imann, H.; Owolabi, O.; Yaqub, N. & Zamani, A. 2010. Knowledge and attitudes towards cervical cancer and Human papillomavirus: A Nigerian pilot study. *African journal of reproductive health*. Vol.14 No. 1,96-98. Consulted 6.09.2011

Nouvo, J.; Melnikow, J. & Howell, L. 2001. New tests for cervical cancer screening. *Journal of the American academy of family physicians* Vol. 64 No. 5,780-786. Consulted 14.01.2011

Özgül, N. 2009. The state of cervical cancer in turkey and cervical cancer screening studies; Ankara, Etlik Maternity and gynecology training and research Hospital, Ministry of Health, Turkey, pg 349. Consulted 12.08.2011.

Pallecaros, A. & Vonau, B. 2007. Human papilloma virus vaccine-more than a vaccine.current opinion in obstetrics and gynecology 2007 Vol 19, 154-546 Consulted 06.05.2011

Perkins, R.B.; Langrish, S.; Stem, L.; Simon, C. 2007. A community-based education programme about cervical cancer improves knowledge and screening behavior in Honduran woman. *Rev panam Salud Publica* Vol. 22 No. 3/2007,187-193

Pink book; Course textbook ; The human papilloma virus. Chapter 10/2011. Cosulted 3.11.2010 <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hpv.pdf>

Powe, B. 2006. Perception of cancer fatalism and cancer knowledge: A comparison of younger and older African American women. *Journal of psychological oncology*.Vol. 24. (Abstract). Consulted 3.11.2010.

Program for Appropriate Technology in Health (PATH). 2000. Planning appropriate cervical cancer prevention. Consulted 5.6.2011

Radecki, C.; Pearson, H.C.; Breltkopf, D. M. 2005. Poor knowledge regarding the pap test among low-income women undergoing routine screening. *Perspectives on sexual and reproductive Health* Vol. 35 No. 2, 78-84

Roland, K.; Bernard, V.; Saraiya M.; Hawkins, N.; Brandit, H.& Friedman, A. 2009. Assessing cervical cancer screening guideline in patient education materials. *Journal of women's Health*. Vol. 18 No. 1, 5-12 Consulted 20.01.2011

Rosario, A.M. 2010. Meeting Chamorro women's health care needs: Examining the culture impact of Mamhlaio on Gynaecological screening. *Pacific Health Dialog*. Vol. 16 No. 1/2010, 81-82.

Royal collage of Nursing. 2006. Human papillomavirus (HPV) and cervical cancer- the facts. Consulted 6.7.2011

http://www.rcn.org.uk/_data/assets/pdf_file/0011/78716/003083.pdf

Saonere, A.J. 2010. Awareness screening programmen reduces the risk of cervical cancer in women. *African journal of pharmacy and pharmacology* Vol. 4 No. 6, 314-323. Consulted 5.7.2011

Scottish Intercollegiate Guideline Network (SIGN) 2008. Management of cervical cancer. A national clinical guideline. Consulted 06.05.2011 <http://www.sign.ac.uk/pdf/sign99.pdf>

Snadden D. 1992. Ethical dilemmas of cervical cancer screening. *Canadian family physician* Vol 38, 331-333. Consulted 12.10.2011.

Stone, K. M.; Zaidi, A.; Rosero- Bixby, L.; Oberle M. W.; Reynolds, G.; Larsen, S.; Nahmias, A. J.; Lee F. K.; Julius, S. and Guinan, M. E. 1995. Sexual behavior, sexually transmitted diseases and risk of cervical cancer. *Journal of epidemiology* Vol. 6 No. 4, 409

Tierney J. 2009. Neoadjuvant chemotherapy for locally advanced cervix cancer (review). *Neoadjuvant chemotherapy for cervical cancer Meta- analysis collaboration*. 4/2009, 2- 9.

Vaccine and Related Biological products Advisory committee (VRBPAC) 2009. Cervarix. VRBPAC briefing Document. Food and Drugs Association Consulted 06.05.2011

<http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/BloodVaccineandOtherBiologics/VaccinesandRelatedBiologicalProductsAdvisoryCommittee/UCM181371.pdf>

Van der Aa, M.; Pukkala, E.; Coebergh, J.; Antilla, A. and Siesling, S. 2007. Mass screening programmes and trends in cervical cancer in Finland and the Netherlands. *International journal of cancer* Vol. 122, 8. Consulted 06.05.2011

<http://onlinelibrary.wiley.com/doi/10.1002/ijc.23276/pdf>

Wesley, R.; Sankaranarayanan, R; Mathew B; Chandralekha, B; Beegum, A; Amma, N and Nair, M. 1997. Evaluation of visual inspection as a screening test for cervical cancer. British journal of cancer Vol. 75 No. 3, 436-440.

WHO. 2002. Cervical cancer screening in developing countries. Report of the world health organization consultation Consulted 14.09.2010

<http://whqlibdoc.who.int/publications/002/9241545720.pdf>

WHO 2007. Can we prevent cervical cancer? The European magazine for sexual and reproductive health No 64/2007. Consulted 10.05.2011

<http://screening.iarc.fr/doc/en64.pdf>