CANCER OF THE CERVIX: A STUDY TO ASSESS THE STATUS OF THE PAP SMEAR SCREENING PROGRAMME IN NAMIBIA

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A minithesis submitted in partial fulfilment of the requirements for the degree of Masters of Public Health in the Department of School of Public Health, University of the Western Cape.

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KEYWORDS:

1. Reproductive Health

2. Uterus

3. Endocervix

4. Cervix

5. Cancer

6. Human Papilloma Virus

7. HIV/AIDS

8. Pap smear

9. Screening

10. Dysplasia

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ABSTRACT

CANCER OF THE CERVIX: A STUDY TO ASSESS THE STATUS OF THE PAP SMEAR SCREENING PROGRAMME IN NAMIBIA.

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This mini-thesis assesses the Pap smear screening programme in Namibia in terms of coverage of the target group, reasons and frequencies of screenings, quality of specimens taken, early detection of lesions and follow – up mechanisms. This screening programme started many years ago, however, no assessment or evaluation was ever been completed on the programme.

In Namibia, cancer of cervix is the fourth most common diagnosed cancer, and the number one cause of death among all types of cancers affecting women, accounting for 20% of cancer deaths. However, this trend could be reversed, because cancer of the cervix is one of the cancers that can be prevented and treated if discovered or detected earlier through a quality Pap smear screening programme.

Another concern is that of the HIV/AIDS epidemic. Although Cancer of the cervix seems not to be an immediate threat to countries, it was confirmed that HIV and Human Papilloma virus infections are closely associated with the cancer of the cervix; thus if the HIV infection prevalence is increasing, cancer is also expected to increase.

Method: It was an explorative, descriptive, quantitative retrospective record review covering three years as from January 1999 – December 2001. All women's records who's' Pap smear were taken in that period made up the population for the study and a systematic sample using random start was used to select records for review. These were from the Namibia Institute Of Pathology (NIP), Cancer Association of Namibia (CAN), and from the Dr. A. B. May Cancer Care Centre. In addition, key informant interviews were conducted with staff involved in the public sector cervical cancer screening programme to contextualise the quantitative findings.

DECLARATION

I declare that, *Cancer of the Cervix: A study to assess the status of the Pap Smear Screening Programme in Namibia,* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: Selma Hilma Dhiginina Auala   November 2002

Signed: ....

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CAN	Cancer Association of Namibia
CI	Confidence Interval
CIN	Cervical Intraepithelial Neoplasia
HIS	Health Information System
HIV	Human Immune Deficiency Virus
HPV	Human Papilloma Virus
IEC	Information Education and Communication
NIP	Namibia Institute of Pathology
PATH	Program for Appropriate Technology in Health
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1. Background

1.1.1. Geography

Namibia is a large country located in the Southwestern part of Africa, mainly consisting of arid and semi – arid land. It is bordering Angola and Zambia in the north, Botswana in the east, South Africa in the South and the Atlantic Ocean is in the west. After independence the country was divided into thirteen administrative regions as indicated in Figure 1.

Figure 1:
Map of the Socio-Ecological Regions (SER) of Namibia[8]

1.1.2. Demography

According to the 2001 Population and Housing Census, the total population is 1,826 854 million, with a total female population of 936 718 (51,2%) and male population of 890 136 (48,7%). In Namibia women of reproductive age (15 – 49 years old) account for 22% (401 907) and 42% of the population

is under the age of 15 years old (Namibia Reproductive Health Policy, 2001: 2). The annual growth rate is 2,9%.

The Namibia Population Projections (2001:30 – 31), estimate the number of women over 15 years old to be 564 800 which is approximately 31%, of the total population, and the women between the ages 35-49 to be 132 700 which is 23.4% of the total female population over 15 years old.

Table 1. Total population by sex and region, Namibia, 2001 Census

REGION	FEMALES	MALES	TOTAL	PERCENT
Caprivi	40 684	39 168	79 852	4.4
Erongo	49 849	57 780	107 629	5.9
Hardap	33 439	34 559	67 998	3.7
Karas	31 991	37 686	69 677	3.8
Kavango	105 168	95 925	201 093	11.0
Khomas	122 503	127 802	250 305	13.7
Kunene	33 864	34 360	68 224	3.7
Ohangwena	124 094	103 634	227 728	12.5
Omaheke	32 200	35 296	67 496	3.7
Omusati	125 657	102 707	228 364	12.5
Oshana	87 690	74 287	161 977	8.9
Oshikoto	84 092	76 696	160 788	8.8
Otjozondjupa	65 487	70 236	135 723	7.4
TOTAL	**936 718**	**890 136**	**1 826 854**	**100.0**

As indicated in Table 1, there are significant regional variations and differences in the size of population, of which the northern regions are highly populated with more than half (58.1%) of the population living there. These are the following: Caprivi, Kavango,Ohangwena,Omusati, Oshana and Oshikoto. The Southern regions namely Hardap and Karas are the least populated with 7.5% of the total population while Central regions Kunene, Otjozondjupa, Erongo, Omaheke and Khomas account for 34.4% of the total population (Population and Housing Census 2001:12).

The highest populated region in the whole country is Khomas. This region constitutes also the capital city of the country and is more industrialized. This region has also the only specialized and referral hospital for the whole country. The Head office of the Cancer Association is also situated in the capital city.

Although Namibia's population is very small, it has a rich diversity of ethnic groups, mostly concentrated in the northern part of the country.

The country attained its independence in 1990 after many years of liberation struggle from colonialism and the then South African apartheid regime. It is characterized as middle – resource developing country and has a skewed income distribution. The majority of the population (70%) is engaged in low productivity subsistence agriculture and informal employment of which the majority is situated in the northern part of the country.
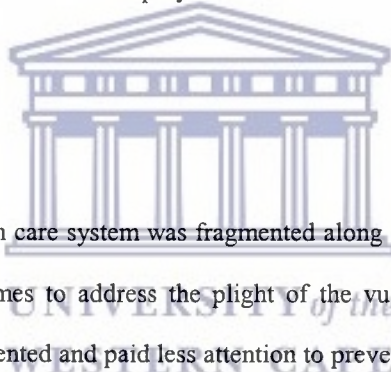
1.1.3. Health care system

Before independence in 1990, the health care system was fragmented along racial lines resulting in the lack of evolution of national programmes to address the plight of the vulnerable groups especially women and children. It was curative oriented and paid less attention to preventive and promotive health activities (MOHSS 1992:2). However, after independence, in an effort to make health services accessible to all Namibians, Namibia adopted the "Primary Health Care" approach, which was launched by His Excellency the president of the Republic of Namibia. This strategy was put under the auspices of the Ministry of Health and Social Services. The Primary Health Care approach includes all the components of which maternal and child health was one of them.

Although health care services are supposed to be accessible to every Namibian irrespective of their background, and efforts are being made to reach everyone, there are still some difficulties in accessing health services in some areas, especially in the rural areas. Access to health services are also compromised by the problems such as shortage of skilled personnel, inadequate referral facilities, difficult geographical access, long distances between health facilities, lack of transport, bad road conditions and poor communication system (Reproductive Health Policy 2002:5).

1.1.4. Policies and Guidelines

There is a Reproductive Health policy, which was adopted and launched in 2002. This policy is inclusive of all reproductive health programmes and issues including Pap smear screening services. According to the Reproductive Health Policy (2002:9), "Reproductive health services (including Pap smears), will be provided through a hierarchy of facilities and expertise starting from the community level and increasing in complexity as the levels progress. These services will be provided through existing community structures, including non – governmental and private organizations, clinics, health centers, district hospitals, regional referral hospitals and the national hospitals."

One of the output objectives reflected in the Reproductive Health Policy (2001:8), is to increase early detection of reproductive system cancers including cancer of the cervix.

The Primary Health Care guideline was developed and adopted in 1992, and it is through this guideline that Pap smear screening is being done. This PHC guideline is inclusive of all Primary Health Care programmes and is not detailed or specific. Each specific field/programme is expected to develop its' specific guidelines. Some programmes have developed their specific guidelines, such as Family Planning Policy and Guideline, Breastfeeding Policy Guideline, Control of Diarrhea Diseases etc. However, there is no specific national standard or guideline for the Pap smear screening programme. Each health facility has developed a simple standard or guide just to use by their health workers on Pap smear procedures.

1.1.5. Pap smear screening services

Although Pap smear screening services were introduced in Namibia about thirty years ago, it was not widely done due to the fact that the health care system was fragmented and ethnic based. It is only after independence in 1990, that Pap smear screening services were introduced in all public health facilities according to the Primary health care guidelines and principles.

Health workers (medical doctors and registered nurses) are introduced through pre – service training on how to take pap smears, and this is also reinforced when starting at a certain facility, according to that

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health facility's standards. Thus registered nurses and medical doctors take Pap smear specimen in every health facility starting from the clinics. Registered nurses who were never trained during pre – service training, are oriented during in – service trainings by other colleagues who were trained.

Except for those who have signs and symptoms or are referred, Pap smear screening has been an opportunistic service given to all women in public health facilities, especially those who come for family planning clinics, ante natal and post natal care as a routine and also for those who request for it. There is no specific target group except that all women of reproductive age and over, which are women between 15 – 49 years old and over, within the Namibian context, can be screened on request. However, girls less than 15 may also receive Pap smear screening if they present for pregnancy related services. As there is no national guideline, each facility does it according to what is feasible for them.

When pap smear specimens are taken at a certain health facility, they are preserved with a cytological spray on a slide, put in a slide container and transported to the laboratory, the Namibia Institute of Pathology (NIP) in Windhoek. The farthest clinic or health facility is 1000km away from Windhoek.

It is expected that the health worker should inform the patient when to come for their results. This should be done on the day when the specimen was taken. When the laboratory results arrived at the certain facility, the patient or client should be available to be informed about her results, and if not available, health workers are supposed to have addresses of the patients in order to follow them up.

For the abnormal results, health workers should inform the client about the result and refer her for appropriate treatment or further diagnostic procedures.

1.1.6.   The Namibia Institute of Pathology (NIP)

All specimens from public (government) health facilities, whether clinic, health center or hospital, are sent to one laboratory, the Namibia Institute of Pathology (NIP) in the capital city, Windhoek. It is a parastatal institution subsidized by the Government of Namibia. A laboratory request form for each specimen is completed by the health worker who took the specimen and attached to the specimen. The

specimen is then transported to Windhoek to the laboratory within one week of when the Pap smear was taken.

At this laboratory, specimens are entered in the register before it is screened. After screening and interpretation by the laboratory technician, the results are entered in the register. The laboratory technician completes the result form and both the original laboratory request form and the result form is attached together, and given numbers according to the year when the specimen was taken and order when was it received as recorded in the register. Two copies are made, one copy is sent to the original health facility, and one copy remains in the laboratory, for future reference. Copies that remain in the laboratory are then stored in order of numbers and year of examination to facilitate future reference if necessary. At the health facility of origin, the health workers are to inform the client about the results.

1.1.7.   The Cancer Association of Namibia (CAN)

The Cancer Association of Namibia is a non – governmental organization responsible to care for those who are affected by any type of cancer and to disseminate information related to all types of cancers in Namibia. Their head office is in Windhoek, the capital city.

Apart from the caring role for those affected, it also plays an important role in preventative programmes, for those who are not affected yet, such as dissemination of health information, preventative, promotive, and rehabilitative as well as screening for cancers. There is a nurse who is employed to care for all those approaching their organization and she is also the one who is responsible to take Pap smear specimens. These specimens are then sent to a laboratory in South Africa, Michelle Mento in Cape Town, for screening and interpretations.

Pap smear services at the Cancer Association are open to every Namibian woman, however, they have to pay a small amount of N$5.00. This is equivalent to five South African Rand. They also provide the services through their mobile clinic once every year at 22 specific sites in eight out of the thirteen regions. These sites are not equally distributed in the regions, as the association selects them based on convenience. The five regions that remain are not covered due to logistical problems.

Cancer clients are referred to them for counseling or any other support such as prosthesis, psychological, and or spiritual. They do not provide curative services, as they are not a clinic or a hospital. For those clients who need curative services they do refer them to public health facilities or to the private sector. The association provides counseling services, as well as support for prosthesis and caring for those who need assistance.

There are no criteria about which women should go to public health facilities and or which women should go to Cancer Association for Pap smear screening. All are being provided Pap smear screening services on voluntary basis and according to their own discretion, or according to where they feel comfortable. It means that there are no fixed clients for each organization. A patient can have a first Pap smear taken at a government health facility, but for a follow up specimen she may choose to go to the Cancer Association or to a private doctor.

1.1.8. Private sector laboratory

Apart from the NIP, there is also one private laboratory that caters for a segment of population that prefers to be private, however, the numbers or percentage of those who are being taken care of by the private sector is not documented. This facility started for the first time with Pap smear screenings at the end of 2000. This facility was not included in this study as our primary focus was on public sector services and access to this facility was limited. However, it is recognized that they could cover a significant number of clients. A study should be conducted to explore it. Those who are being taken care of through these services are doing it on voluntary basis nobody is forced and of course they have to pay more than at public health facilities and at the Cancer Association.

1.1.9. Dr. A. B. May Cancer Care Center

The Dr. A. B. May Cancer Care center is the only facility in Namibia where all those who are diagnosed with any type of cancer, are referred to for further diagnostic procedures, treatment or referral to other countries, like South Africa, for treatment. All patients who are positively diagnosed with cancer either through NIP, CAN or private sector, are referred to this center unless they have other means to request to be transferred to other countries. All the patients are entered in the admission register. This center is situated in the capital city of Namibia, Windhoek.

At this center patients are treated according to the stage of their disease. Whatever happens to the patient in this center, after treatment or examination, they are referred to the Cancer Association for counseling and any other support services they might need.

1.2.   Rationale

Cervical cancer is a major health problem among women worldwide, and its impact on women's health continues to increase the morbidity and mortality rates among women. Globally, the most affected women are those in developing countries where screening programmes are not well established or poorly managed and less effective. World wide approximately 200 000 women die annually due to cervical cancer and the majority of these deaths are in developing countries (PATH, 2000:3).

Namibia, as one of the developing countries, is no exception to this health problem. After independence in 1990, cervical cancer screening was introduced in all public health facilities through the Primary Health Care approach; however, the impact of this screening programme was never assessed or evaluated to determine whether they are contributing negatively or positively.

In addition, with the rising HIV/AIDS epidemic, more emphasis is being concentrated on HIV/AIDS. The pre – cancerous lesions known as cervical dysplasias are common in women with HIV infection and those who are severely immunosuppressed appear to be at higher risk for dysplasia and neoplasia, and HIV – positive women are almost five times more likely to have dysplasia than HIV – negative women (Leroy et al., 1999; Fruchter et al., 1998; Abercrombie and Korn, 1998). Thus, women with HIV – induced immune – suppression are at high risk of developing cervical cancer, and in the case of Namibia, which is one of the top ten countries highly affected by HIV/AIDS infections, the number of cervical cancer can be expected to increase as the incidence of HIV infection increases. Thus one cannot talk about HIV/AIDS and leave out cancer of the cervix.

As there are no baseline data on the coverage of Pap smear screening in Namibia, this study aims to assess the status of the screening programme in Namibia. The information obtained will be utilized for recommendations to the Ministry of Health and Social Services.

1.3. Research Problem and Research Objectives

1.3.1 In Namibia, two percent (2%) of all in – patients in public health facilities are people with cancer (Obeid et al, 2001: 70 - 71). Katjiuanjo et al, (1998/1999: 38) stated that 6% of all deaths in Namibia are due to any type of cancer. Cervical cancer is the fourth common diagnosed cancer and 13% of all cancer deaths were attributed to cervical cancer.

Between 1995 and 1999, about 1172 women died due to different types of cancers, however, cancer of the cervix was the number one cause of death among all types of cancer affecting women, accounted for 231 (20%) deaths in women (Obeid et al, 2001: 70 –71).

The researcher wants to know why are women still being diagnosed with invasive cervical cancer if the screening programme is available and accessible to every woman. Out of the total female population over the age of 15 years old (564 800), how many are screened and why?

1.3.2 Research Objectives

The study attempted to answer the following questions:

What is the status of the Pap smear screening programme in Namibia in terms of:

1) coverage of the target population,

2) early detection of lesions,

3) quality of specimens taken,

4) frequency and reasons of Pap smears taken, and

5) follow up of women diagnosed with abnormal Pap smears?

In addition to these primary research questions regarding the Namibian public sector Pap screening programme, we also were interested in differences across screening institutions within the public sector and the diagnosis and treatment of cervical cancers at the tertiary cancer facility.

1.4. Delimitation of the study/ Assumption on which the research project rests

This thesis will mainly focus on the status of Pap smear screening programme among women from 15 years and above. It will look into the number of eligible women covered, the number of Pap smears

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taken, the age group covered, the geographical areas and the frequencies of the screening. It will also look at the quality of specimen taken, follow – up mechanisms and cervical cancer diagnosed in the past three years.

As Namibia's population is small, there is one laboratory, where all the specimens from state/public health facilities are being screened, one Cancer Association, and one center for the treatment of cancer, this study assumes that these three sources of data represent the majority of Pap smears and cancer treatment in Namibia so that the samples from these sources are a reflection of the current Pap smear screening situation in the public sector in Namibia.

While it is recognized that a comprehensive Pap smear screening programme should include a substantial health promotion and health education component, in addition to the actual cytology screening, this research focuses primarily on the cytology component. The resources necessary to evaluate health promotion programmes in the testing sites, such as travel to the clinics, were not available for this project. However, some issues concerning health promotion and health education in the Pap smear screening programme were raised by respondents during the key informant interviews.

1.5. Thesis outline

The thesis is divided in five chapters of which the first chapter is the one you are reading now, which covers an introduction. The second chapter will talk about the related literature consulted on the topic and its' relevance to the discussions, the third chapter is covering the methodology or research design used to collect the data, the fourth chapter is dealing with the findings of the assessment and the fifth chapter deals with discussions and conclusions on how to proceed having in mind all those findings.
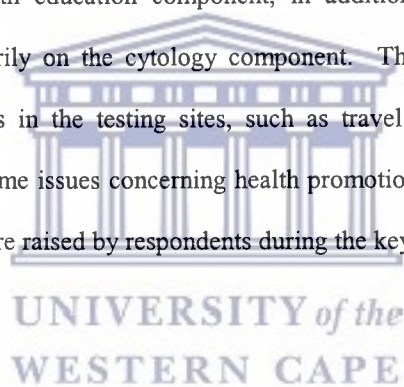
CHAPTER 2: LITERATURE REVIEW

2.1.   Introduction

A research project or study does not exist in isolation; it should build upon what has been done previously. Therefore, before embarking on a project, a researcher should review previous work in the field. It usually includes recently published research, but could also include a review of historical and oral material. This review involves the identification and analysis of literature related to the research project, with the aim of putting the research project into context by showing how it fits into a particular field (Blanche &Durrheim 1999: 17).

Literature review refers to the process of identifying literature relevant to the research topic, reading, understanding and forming conclusions about research design and theory published on the topic one is interested in. It is through literature review that one discovers studies conducted by others that can be replicated, compared and/or contrasted to the planned study. A good literature review should identify knowledge gaps in what is known, explains mistakes and successes of other researchers related to the topic and helps understanding the findings. (Blanche & Durrheim 1999:27; Cormack 1997:69).

The aim of the literature review in this study is to obtain information from all relevant sources including electronic materials, books, journals, government gazettes, meetings/conference proceedings and any type of report/press release with regard to Cervical cancer and the status of Pap smear screening programme globally, regionally and nationally. The review is presented under the sub – headings as indicated below:

- Cervical cancer
- Pap smear screening programmes, and
- Method of evaluation

2.2. Cervical cancer

2.2.1. Explanation of cervical cancer

The uterus is part of the female reproductive system organ in which the foetus is carried during pregnancy. The cervix is a lower segment of the woman's uterus/womb, which connects the uterus to the vagina. Cervical cancer is a cancer of the cervix, caused by cells dividing and multiplying in an uncontrolled way. It is preceded by cell changes, a precancerous condition called cervical intraepithelial neoplasia (CIN), which may or may not develop into cancer. In the case of the cervix, cell changes are very slow, and in some cases they do not progress any further. These cell changes or pre – cancerous conditions are also known as "dysplasias" (Miller, 1992:6-7).

According to WHO (National Cancer Control Programmes 1995:xiv), cancer is the result of the failure of the mechanism that regulates normal cell growth from mild to severe abnormality, with invasion of neighboring tissues and eventually, spread to other areas of the body.

Benjamin and Rubin in Oncolink (2001:3) stated that there are two common changes in cells namely metaplasia and dysplasia. Metaplasia is a non-cancerous cell change that is needed for normal cell growth or cell repair, and it normally occurs in unborn babies, during adolescence and with the first pregnancy.

However, with dysplasia there is an increase in the number of cells formed, which do not mature as expected, and it changes the entire inside of the cell. The higher the increase in number of these cell changes on the cervix, the more likely it will progress to invasive cervical cancer. This is the reason why dysplasia is labeled a pre – cancerous condition. A small proportion of mild dysplasias will disappear without treatment, however it is not possible to differentiate between dysplastic areas of the cervix that will return to normal and those that will progress and become cancer (Oncolink; Ivor Benjamin and Mary Rubin, 2001).

Miller (1992:7) stated that there are three stages of dysplasia before it develops into invasive cervical cancer, namely mild, moderate and severe. The term dysplasia means that changes have occurred in the cells of the cervix, giving them the characteristic of tumor, but without involvement of the full

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thickness of the epithelium of the cervix. When the full thickness of the epithelium is involved, the term carcinoma in situ (CIS) is used.

Cervical cancer is the most common form of reproductive system cancer found in women in the world as a whole, and is rated as the second most common malignancy among women after breast cancer. According to the World Health Organization, cervical cancer is a serious women's health problem in developing countries, claiming the lives of about 200 000 women each year. It is the third most common cancer and the leading cause of death from cancer among women in developing countries. Out of 370 000 new cases of cervical cancer identified each year, 80% are in developing countries and the rates are highest in Central America and Sub – Saharan Africa (Parkin et al in WHO Bulletin: 1984: 163).

Katjiuanjo et al, (1998/1999: 38) stated that in Namibia cervical cancer is the fourth most common diagnosed cancer and 13% of all cancer deaths were attributed to cervical cancer. Between 1995 and 1999, cancer of the cervix was the number one cause of death among all types of cancer affecting women, accounting for 231 (20%) cancer deaths in women (Obeid et al, 2001: 70 –71).

2.2.2. Causes of cervical cancer

The cause of cervical cancer is unknown, however, there are a number of factors associated with cervical cancer. Infections with Human Papilloma Virus (HPV) and Human Immune Virus (HIV) are strongly linked to cancer of cervix (Bosch et al., 1995; Ho GY et al., 1995; Sherris, 1999).

In a South African study conducted by Lomalisa et al (2000), it was found that cervical cancer progresses rapidly in women infected with HIV and HIV infected women presented with invasive cervical cancer 10 years earlier than HIV – negative women. HIV can also contribute to cervical cancer due to the fact that HIV infection facilitate HPV infection and accelerate the progression of precursor lesions to invasive cervical cancer (Abwao 1998: 17)

Early sexual activities, multiple sexual partners, age, use of oral contraceptives and smoking are also associated with cervical cancer (Miller, 1992; Brinton, 1992). The chance of dying from cervical

cancer increases, as women get older. In his study, Lawson (1998: 745 – 752), found that 72.2% out of 150 women diagnosed with invasive cervical cancer, were 40 years and older.

Human Papilloma Virus (HPV) infection, unprotected sex, HIV and sexually transmitted infections are some of the major contributing factors to cervical cancer (Walboomers, J.M. et al, 1999; Womack, S. D. et al 2000; Hillemanns, P. et al; 1999; and Schiffman, M. et al: 2000).

It is estimated that about 90% of cervical cancer in developing countries can be directly attributed to HPV infection. Although there are many factors associated with cervical cancer, such as those mentioned before, it appears that many are proxies for HPV infections (Pisani et al 1997:387 – 400). HPV infection is a great problem due to the fact that it is asymptomatic and can easily be transmitted from one person to another, even from mother to the infant. The biggest challenge is that symptoms can be treated and cured but the underlying infectious agent can remain in an individual for years and can re occur any time. (Outlook 1998:3).

It has been theorized that treating abnormal or dysplastic tissue may protect women from developing cancer in the future by eradicating the underlying HPV infection (Bollen et al 1997:450 – 460)

2.2.3 Pap smear and its advantages

Pap smear screening is an examination or evaluation of exfoliated cells taken from the cervix or the mouth of the womb that is located on top of the vagina. When these cells are stained and examined microscopically, they show changes consistent with a variety of abnormalities including invasive cancer (Rich 2002:2).

Screening means to test for the presence of a cancer before there are any symptoms or findings on examination. Thus the major advantage of Pap smear tests is to detect changes on the cervix before they become cancerous, and these pre – cancerous/malignant changes are easily and effectively treatable (Rich 2002: 2). It is estimated that, women who never had a Pap smear test, have a higher risk of developing cervical cancer than the ones who have. Cancer-screening programmes can significantly

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reduce the incidence and mortality from the disease in a country, even up to 90% where screening quality and coverage are high (Miller 1992:4 - 5, PATH 2000:11).

The most pronounced reason for higher rates of cervical cancer in developing countries is the lack of effective screening programmes in the detection of pre – cancerous conditions. Although efforts to reduce the impact of cervical cancer have been initiated in most countries, attempts in developing countries have not been successful due to factors such as lack of awareness, limited access to health services and inadequate inaccurate Pap smear services (Outlook 1998:1). In most African countries there are no national cervical screening programme due to many competing health needs, such as Malaria, HIV, TB, and other financial implications (Abwao, 1998: 19).

Studies suggest that deaths from cervical cancer will decrease if women at risk have a regular Pap - test. Women at risk are those who are sexually active, have multiple partners, have had early sexual activities, and those who are older (Miller 1992:15 - 19).

Fisher and Page in Stellmann (1987) stated that Pap smear screening increases the opportunity to identify potential disease, maximizes the likelihood of early treatment, and minimizes the potential of mortality from cervical cancer.

However, Rich (2002:3) stated that an abnormal test is not a diagnosis and a normal test never excludes a cancer, as it is known that 10% of women with an obvious cancer of the cervix, will have a Pap test that is essentially normal.

2.2.4. Classification of cervical lesions

According to Benjamin et al in Oncolink (2001:2), there are several different classification schemes for characterizing Pap test results. At times this causes confusion. As indicated in Table 2, the original class system developed by Papanicolaou seems to be outdated and replaced by the CIN grading system and the Bethesda System. Both the Namibia Institute of Pathology (NIP) and the Cancer Association of Namibia (CAN) use CIN grading system.

Table 2. Classification of cervical lesions

Description	CIN grading	Bethesda System	Class (outdated)
Normal	Normal	Normal	Class I
Atypia Reactive or neoplastic	Atypia	ASCUS	Class II
HPV	HPV	Low – grade SIL	Class II
Atypia with HPV	Atypia "condylomatous atypia" and "koilocyctic atypia"	Low – grade SIL	Class II
Mild dysplasia	CIN I	Low – grade SIL	Class III
Moderate dysplasia	CIN II	High – grade SIL	Class III
Severe dysplasia	CIN III	High Grade SIL	Class III
Carcinoma in situ	CIS	High grade SIL	Class IV
Invasive cancer	Invasive cancer	Invasive cancer	Class V

2.2.5. Treatment and Prognosis of cervical cancer

Prognosis is mainly dependent on the stage of the disease when it was diagnosed. Mild dysplasias usually do not progress further or regress, however larger, deeper and severe dysplasias/lesions are more likely to progress to cancer. Dysplasias are nearly 100% curable if treated appropriately. Cervical cancer starts with an in situ stage, known as carcinoma in situ (CIS), that can be cured if treated properly, but may progress to invasive cancer if left untreated, which, if surgery and radiotherapy are not available, is always fatal (Tinker 2001:6).
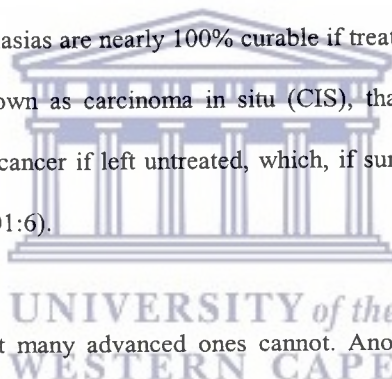
Most early cancers could be cured but many advanced ones cannot. Another determining factor is recurrence. If cancer re occurs it means cancer cells have already spread. However, if there is no recurrence in five years it is unlikely to re occur. More advanced stages of cervical cancer are often fatal despite treatment (WHO 1995:64).

Early detection of cervical neoplasia provides an opportunity to prevent or delay progression to invasive cancer by performing clinical interventions such as colposcopy, conization, cryocautery, laser vaporization, loop electro surgical excision, and, when necessary, hysterectomy.

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2.3. Pap smear screening programmes

2.3.1. Target population

According to the World Health Organization, at minimum women should be screened at least once between the ages of 35 and 50 (Miller, 1992:31, WHO 1995:64 -65). Countries with limited resources should aim at screening 80% of the women in this age group at least once. A similar approach was also suggested by Tinker (1997) and (PATH 2000:1), that lower – middle –income countries' effort should focus on a screening programme that will reach women between the ages of 35 and 50 at least once. Screening at too young age could lead to enormous use of resources in treating lesions with low probability of progression to invasive cancer (Miller, 1992: 6).

A study conducted by Chirenje et al (2001) in Kenya, Lesotho, Uganda, Tanzania and Zimbabwe, the findings were that most countries had a basic infrastructure for Pap smear screening, however the coverage was extremely low in all countries and women frequently presented with an advanced stage disease. There was a total lack of policy guidelines on cervical screening and record keeping on screening for cervical cancer was very poor.

Cervical cancers mostly develop in women after the age of 40 and high grade dysplasia are generally detectable up to 10 years before cancer develops, with a peak dysplasia rate at about the age of 35 years. Therefore screening would be appropriate when women are in their 30s and 40s (Outlook 1998:4).

In a study conducted by Murthy et al in 1993 to determine at what age the screening could cause the greatest overall reduction in mortality from cervical cancer, the findings were that screening at age 45 years would be most effective.

In a study by Lawson (1998), 72.2% of 150 women diagnosed with cancer, were 40 years and older. Ponten et al study (1995) found that cervical cancer risk peaks around age 50.

In a study conducted by Chirenje et al (1998 : 264 - 267) on cervical cancer patients at Harare and Parirenyatwa Hospitals, the burden of cervical cancer occurs around the peak age of 47, and the

majority of women present with an advanced disease. Out of the 196 women studied, none had ever been screened for cervical cancer.

A review by Sankaranarayanan et al (2001: 954-962) concluded that for middle-income developing countries "It would be more realistic and effective to screen high-risk women (e.g. those aged 35-49 years or 30-50 years) only once or twice with a good quality and highly sensitive test, with an emphasis on wide coverage (>80%) of the targeted women (pg. 960)."

The agreement at the ECSA meeting on the Prevention and Control of Cervical Cancer in the Eastern and Southern Africa Region was that 85% of invasive cancers are diagnosed among women at the age of 35 and older, thus for the region this is the best age to be targeted for screening (Abwao, 1998: 46). However countries can adjust the age according to the real situation in the specific country.

2.3.2. Frequency of Pap smear screenings.

The World Health Organization estimates that in developing countries only about 5% of women had been screened for cervical neoplasia in the previous five years compared to 45-50% in developed countries (WHO 1985:64 (4): 607 – 618).

Some observational data suggest that the effectiveness of cervical cancer screening increases when Pap testing is performed more frequently and when the intervals between smears are shortened (Clarke et al in the Lancet 1979:2; 1- 4).

However, Miller (1992:22 – 23) is of the opinion that effectiveness of cervical cancer screening is more likely to be improved by high coverage of the women who are not currently being screened and by improving accuracy of pap smears than by efforts to increase the frequency of testing. Generally, cervical cancer develops slowly from precursor lesions, therefore screening even infrequently, can still have a significant impact on morbidity and mortality. Screening emphasis should be on coverage of high-risk women rather than on frequency (Outlook,1998: 4).

2.3.3.   Reasons for Pap smear screening

Screening means to test for the presence of any abnormality before there are any symptoms (Rich 2002:2). Cytological screening is one of the proven strategies for control of cervical cancer. Depending on what a certain country defines as their target group, these women are supposed to go for routine Pap smear screening (Miller 1992:3).

In their study of East, Central and Southern Africa, Chirenje and colleagues (2001:131) found that in this region there were no guidelines regarding screening, that women were screened mostly by "chance", and that those screened were often under 25 year of age (low risk) or were already symptomatic.

Many women may have their Pap smears taken not necessarily as a routine preventative measure, but due to different reasons ranging from, referral or as a diagnostic procedure. In most cases, women tend to seek screening only when they are symptomatic rather than as a preventative measure. In his study Lazcano – Ponce et al (1999) found out that 55% of women with cervical cancer seek help because they have symptoms.

Miller (1992:32 –33) suggests that women could be invited personally to come for Pap smear screening, or they could be captured also whenever they attend a health facility for any other reasons, that the health worker should check whether they have been screened.

Another opportunity is during maternal and child health/family planning clinic. Some researchers are not impressed by this approach due to the fact that it may be an obstacle for women to come for family planning (Abwao 1998:6), and that targeting women at such a wide age range (20-65 years) is unrealistic for low and middle-income countries (Sankaranarayanan 2001: 954-962). However it is also argued that using ante and postnatal care services for cervical screening has some benefits, in that a lot of women who are sexually active will be covered; baseline for future screening is created and also there are educational benefits. This opportunity could also be used to send messages to mothers and aunts of those women who are attending these services (Miller: 1992:33).

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2.3.4. Early detection of lesions

Although WHO have no specific target for early detection, cervical cancer is preventable and curable if detected and diagnosed early enough. Pap smear screening is one of the tests intended for the early detection of cervical dysplasia and cancer (Mitchell et al 1993; 12:34 – 40-, Sherman et al: 1993: 37; 699 –704). Treatment of these early lesions is highly effective, whereas more advanced stages of the disease may be fatal despite all the efforts to treat it (WHO; 1995:64).

Miller (1992:12) stated that the majority of women who develop invasive cancer have either not been screened at all, or have not been screened for five (5) years or more. This was also confirmed by Anderson et al (1988). A reduction of at least 60% in incidence and mortality from the disease from baseline is possible and in some countries, invasive cervical cancer incidence and mortality has been reduced by as much as 90% through screening programmes (Eddy, 1986:421 – 428).

Early detection of cervical neoplasia provides an opportunity to prevent or delay progression into invasive cancer by performing appropriate clinical interventions. There is evidence that early detection through routine Pap smear testing and treatment of dysplasias can lower mortality from cervical cancer (Miller 1992:14)

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However, in their study of cervical screening in developing countries, Lazcano – Ponce et al (1999) found out that women seek screening in a late stage of disease and 55% with cervical cancer seek help because they have symptoms. In most cases, women might not want to risk disapproval by their partners, by going to Pap test and receive abnormal results. They rather ignore the Pap smear tests and will only seek the screening when they are already symptomatic and by this time, for some women it is already late (Lazcano – Ponce et al, 1999).

2.3.5. Quality of Pap smear specimen

The test – retest reliability of Pap smears is influenced to some extent by variations in the expertise and procedures of different cytopathology laboratories. A large proportion of diagnostic error may be

attributable to laboratory error. False – negative were made in 7.5% of smears with moderate dysplasia and false – positive diagnoses were recorded in 8.9% with no more than benign atypia (Yobs: 1985).

A survey conducted in 1991 of 600 laboratories found out that 1-5% of specimens received were either unsatisfactory or sub - optimal, generally because endocervical cells were absent from the smear (Davey et al; 1992:903 –907).

Lazcano – Ponce et al (1994) in a descriptive study found out that 64% of the specimens taken lacked endo-cervical cells and false negative readings ranged from 10% to 54%.

There are conflicting ideas regarding the importance of presence of endocervical cells in the specimen. Some people argue that there is no association between the presence of endocervical cells and the detection rate of dysplasia, and others are saying that dysplasias are detected over 2 times more frequently when endocervical cells are present (Elias et al; 1983:225 – 229; Mauney et al; 1990:18 – 21; Kivlahan et al 1986: 258-260; Mitchell et al; 1991:741 –742).

However, Pap tests are not 100% accurate. About half of the false negative results (missed abnormalities) are due to inadequate specimen collection and other half to a failure to identify the abnormal cells or to interpret them accurately. Thus providers also need appropriate training on the technical aspect of specimen collection and smears should be properly collected, stored and transported to the laboratory and the results must be provided to clients within reasonable time frame (Outlook :8).

2.3.6. Follow up of women with abnormal Pap smears

Follow up is one of the important strategies in fighting cervical cancer. Miller (1992:36 - 37) suggests that women whose results were abnormal, they should undergo two evaluations at 6 – month intervals, if both are negative, then annual cervical screening should be performed.

Women who had hysterectomy in which the cervix is removed do not really benefit from Pap smear unless it was performed due to cervical cancer, however in those were the cervix was not removed, they may still need pap smear screening (Woolf 1996:6).

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Failure of some health workers to provide adequate follow up for abnormal Pap smears is another source of delay in the management of cervical dysplasia. A large proportion (30%) of patients with abnormal smears do not return for further evaluation (Mandelblatt 1993; 9:133-138 and Marcus et al 1992; 30:216 –230).

Client records are key to effective programme monitoring and evaluation. A registry could be established and women should be given screening record cards detailing all their screening visits and results to remind them of their next due date and also to inform new providers of their screening history. With regular follow up care by trained health professionals, women with pre – cancerous cervical abnormalities should not develop invasive cervical cancer (Outlook 1998:8).

2.4. Method of Evaluation

According to Grimes and Schulz (2002:145 –148), descriptive studies are often the first tentative approach to a new event or condition, especially useful when assessing a health status of communities or when one wants to monitor trends and to plan for intervention resources.

A descriptive quantitative retrospective study was conducted by Lawson (1998) in USA, on 312 858 women who received one or more Pap tests between 1991 – 1995. Useful information was collected regarding the number of tests done, age of women, ethnicity and quality of the specimens. The data were reported by 22 states. Approximately 24%of the women were younger than 30 years of age, whereas 58% were 40 years of age or older. Approximately 44% were black, Hispanic, American Indian or Asian. Results were abnormal in 3.8% of first Pap tests and 3.2% of subsequent tests. Of the 150 women who were diagnosed with invasive cancer of cervix, 72.7% were 40 years of age or older.

Another descriptive study by Lazcano – Ponce et al (1994) found out that 64% of the specimens lacked endo-cervical cells, false negative readings ranged from 10% to 54% and that women tend to seek screening when they are symptomatic rather than preventative measures.

As the main aim for this study is to assess the status of the cervical cancer-screening programme in Namibia, the descriptive quantitative retrospective study will be a springboard into more rigorous studies on the subject.

2.5. Summary

This chapter has explored on work and studies done on cervical cancer as well as on Pap smear screening as a preventative measure against cervical cancer. The importance of early detection in better prognosis of cervical cancer is clearly stated. Furthermore interventions in the programme to cover the target group are spelled out according to different settings, as well as, improvement in follow up mechanisms.

The next chapter will explain the research design used in this study.

CHAPTER 3:   RESEARCH METHODOLOGY/DESIGN

3.1.   INTRODUCTION

In the first two chapters the background to the study as well as the theoretical framework on which the study is based upon, was presented. This chapter will explain the research design used, the study population selected and the sampling technique applied. The development and pre – testing of the instruments, procedures followed in both the collection and analysis of data, as well as limitations and ethical considerations involved, will also be discussed.

3.2.   THE RESEARCH DESIGN

Two methods were used for this evaluation study:

1) An explorative, descriptive, quantitative, retrospective record review covering three years as from January 1999 to December 2001. Descriptive retrospective record review studies provide first hand information and at the same time it paves ways for more extensive studies (Grimes and Schulz 2002:145 –148).

2) Another method used was that of qualitative descriptive interviews conducted with key informants. This approach was taken in order to contextualise the quantitative findings related to the study objectives with regard to the following:

- The researcher wanted to obtain information on what is happening in the field of Pap smear screening, and not all of the desired information was documented in records.

- The researcher wanted to describe the status of the programme as perceived by those working in the Pap smear programmes.

- The researcher wanted to explore possible solutions to whatever is not satisfactory with those working in this area.

3.3. POPULATION

The study population was all women who had one of the following:

- Whose Pap smears were taken according to the laboratory registers/forms in the years 1999 – 2001 at the Namibia Institute of Pathology.

- Whose Pap smears were taken according to the Cancer Association registers in the years 1999 – 2001.

- Who were diagnosed with cervical cancer in the years 1999 – 2001 and entered in the admission registers of the Dr. A. B. May Cancer Care Center.

3.4. SAMPLING AND SAMPLE SIZE

A systematic sample using a random start was used to select records from the laboratory, the Namibia Institute of Pathology (NIP). These records were, as explained in the introduction, the completed requisition forms from a health facility, attached together with the result forms and stored in a special room in order of numbers according to the year of examination.

The sample was selected according to the systematic sampling technique as the records were numbered and stored according to the numbers on shelves. A sampling ratio of 0.10 was chosen and this gives a sampling interval of 10.

The same technique of sampling was used at Cancer Association, however at Cancer Association the register was used. Names are numbered and entered in the register according to the year of examination and the site of examination. A sampling ratio of 0.10 was chosen which gives a sampling interval of 10. In both cases a random number between one and ten was chosen and then counting from that number, every tenth laboratory forms and every tenth name was included in the sample.

The exact number of Pap smears taken during the study period was not known during the research planning phase. It was expected that the number of Pap smears for the study period would exceed 10 000 so that a 10% sample would yield at least 1000 records for the study sample. After the initial study review it was found that a total number of 32 085 Pap smear specimens were taken and screened between January 1999 and December 2001 (24 630 from NIP and 7455 from CAN). From this study population a sample of 3268 was selected for review using the method described above. A post-hoc power analysis using EpiInfo 2000 indicated that this sample size should provide 95% confidence intervals of +/- 1-2% or less for population estimates in this report (i.e. 0.1% to 80%),

At Dr. A. B. May Cancer Care Center, since the number of actual cancer cases was so small, all women with cervical cancer, admitted in the center as from January 1999 to December 2001, according to the

admission registers were included in the sample. The same patients' files were retrieved for additional information, which were not recorded in the admission register.

The four key informants were conveniently selected which means, who ever was in charge or acting on behalf of the in – charge at the time of the study, was included in the sample. The sample includes the following: a Laboratory technician in charge of pap smear specimens at NIP, Medical Doctor in charge of the Cancer Care Center, the Registered Nurse who is dealing with Pap smears at the Cancer Association and the Health Information System Programme Manager.

3.5. DEVELOPMENT OF INSTRUMENTS

Since, for the three institutions, namely laboratory (NIP), Cancer Association (CAN) and the Dr. A. B. May center, records were reviewed, checklists (annexures 9-11) were used to record the necessary information. The checklist was divided in rows and columns. Each row represent one patient's record and each column represent one type of information being reviewed from each patient's record. Each column has the possible alternative responses for each question according to the corresponding code lists (annexures 6-8). The researcher also kept a log of qualitative notes of items which seemed to be important or need more investigation, but were not accommodated in the checklist format to be reviewed later by the researcher. The researcher had to fill in all the necessary relevant/ information in the checklist.

For key informants, a semi structured interview schedule was developed. The reason for using interview one could get in – depth responses by making use of probe questions. This will also ensure that all respondents will be asked similar questions, though not exactly the same as the field in which each of them is working is not the same. Non – verbal responses could also be observed.

3.6. PRE – TESTING OF THE INSTRUMENTS

Pre – testing are used to identify possible problems with proposed research using a small sample of respondents before the main study is conducted. It can be conducted with a sub sample of the proposed sample or with a small sample representative of the proposed sample (Blanche and Durrheim 1999:298).

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For the checklist, some of the blank laboratory request and result forms, blank registers at the identified institutions were reviewed to see whether all the necessary information could be found, unless only in case of incomplete records due to human error/incompetence.

Pre - testing was also done with key informants' interview schedule. Each was pre tested with junior staff from the same institution. After the pilot study, corrections of the instruments were made which included rephrasing, simplifying, deleting some questions out of the schedule and changing some open ended to close ended questions and vice versa.

3.7.   DATA COLLECTION

3.7.1.   Record review

The following records were reviewed retrospectively from January 1999 to December 2001.

- Laboratory requisition forms
- Laboratory result reports
- Cancer Association Pap smear registers
- Dr. A, B. May Cancer Care Center admission registers.
- Dr. A. B. May Cancer Care Center patient files

During record review two research assistants were utilized, one from each institution respectively. They were mainly assisting with the location of records as well as to assist with the collection of data, namely to do the systematic sampling. They were given a simple training on which type of records are required and also on how to do the systematic sampling. The researcher herself records all the necessary information, according to the checklists provided.

Checklists were used to record all the necessary information from the registers at the Cancer Association (annex 10). Another checklist was also used for the laboratory requisition and result forms, such as age, region, reasons, and the outcome of the test (annex 9) and for the Cancer Care center registers (annex 11).

3.7.2. Interview with key informants

The following selected key informants from each institution were interviewed according to the semi-structured interview/questionnaire.

- The Laboratory technician responsible for Pap smear specimens (annex 2)

- The Medical Officer at the Dr. A. B. May Cancer Care Center (annex 4)

- The Registered Nurse responsible for Pap smears at the Cancer Association (annex 3)

- Health Information System Programme Manager (annex 5)

The interviews were conducted in order to determine the knowledge, attitude, perception, and practices of experts in the field of cervical screening programme. The researcher using semi-structured questionnaires interviewed all. It was also necessary to identify any problems or shortcomings they have been experiencing in the implementation of the programme. Table 3 summarizes the data collection techniques, tools, sources and the period of data collection.

Table 3: Summary of data collection techniques, tools, sources and period

Techniques	Tools	Sources	Period
Record review	Checklist	1. Laboratory requisition forms 2. Laboratory result reports 3. Cancer Association Pap smear registers 4. Dr. A. B. May Cancer Care Center Admission registers and patient files	Jan.99 – Dec.01 Jan.99 – Dec.01 Jan.99 – Dec.01 Jan.99 – Dec. 01
Interviews	Questionnaire	1. Laboratory technician 2. Medical officer 3. Registered nurse 4. Health Information System programme manager	24 Sept. 02 25 Sept. 02 26 Sept. 02 22 Oct. 02

3.8. DATA PROCESSING AND DATA ANALYSIS

The quantitative data collected through record review and interviews were pre – coded and entered into Excel and analyzed using Excel and EPI Info 2000.The data were subsequently cross – checked with records, cleaned and recoded as required for data analysis.

Data analysis included frequencies and simple descriptive statistics such as means, rates and 95% confidence intervals around the estimates. Cross-tabulations for rate differences and 95% confidence

intervals were used to examine differences across the selected factors such as age groups and area of origin in relation to quality of specimens, and rates of screening and cancer.

The qualitative data collected through the semi – structured questionnaires, were manually tallied and analyzed. Open – ended questions were analyzed using a qualitative content – theme approach and summarized.

3.9.   VALIDITY AND RELIABILITY

Validity and reliability refers to the principles used to evaluate the measurement techniques. Validity refers to the degree to which the measuring instrument measures the variable it is intended to measure, while reliability is the extent to which the instrument is able to produce the same results if the study is repeated by somebody else. (Blanche et al 1999:83,88)

Validity in this study was ensured by designing the checklist and questionnaire according to the aim of the study, and including all the information from the aim of the research topic in the questionnaire. Reliability of the instrument was assured by developing clear, definitions of all concepts and by pre – testing the instruments.

However, when using routine data sources, such as specimen forms and registers, the researcher does not have control over the quality of the available data. Missing and ambiguous data from sources of this type can also be a problem. Problems related to record keeping and missing data were found and are described in the result and discussion chapters.

3.10.   LIMITATIONS

Laboratory requisition forms from most health facilities were not complete. There were a lot of missing information, starting from demographic data, reasons for procedures, previous examinations and even spelling of some names were not correct.

In some records and registers the address and region where the client came from is not indicated, thus the researcher has to try and locate the original file of the client. It was also difficult to retrieve all the necessary files to check for missing information.

The key informants interviewed were specific professionals, conveniently selected. The findings therefore provide an impression, rather than a representative, reflection of the knowledge, attitude, perception and practices of those involved in the cervical screening programme.

At the time of the study it was not possible to interview the qualified laboratory cytologist who is dealing with Pap smears, as the laboratory did not have anyone anymore. This was the reason that since September 2001, the laboratory is sending their specimens to a laboratory in Bloemfontein, South Africa, for analysis. Therefore, the laboratory technician who processed the Pap smears, forwarded them to South Africa, and processed the reports from the cytology lab was interviewed, as they were the most familiar with the current Pap smear programme and quality of specimens coming to the NIP.

Although there is only one laboratory where the specimens of all state patients are analyzed, there might be a significant number of patients who are utilizing the private institution laboratory. These private institutions on receiving the results of their clients they attend to them on their own. They are not obliged to provide any information on the statistics, unless requested. Thus this factor made it difficult to generalize the results of this study to the total number of all women in the country, but results should be representative of the public sector programme.

3.11.   ETHICAL CONSIDERATIONS

The protocol was reviewed and approved, including ethical clearance, by the Higher Degrees Committee of the Faculty of Community and Health Sciences at the University of the Western Cape.

The research committee of the Ministry of Health and Social Services in Namibia also reviewed the proposal, and permission was granted to conduct the study.

Permission was also obtained from all relevant authority of the three institutions to go through all their registers and records. Names used for tracking and cross – checks were kept confidential, and not reported throughout the study and presentations. Key informants were interviewed after informed consent, and no names were recorded.

3.12. SUMMARY

This chapter has explained the study design applied, the population and sampling technique followed, the development of instruments, methods of collecting and analyzing the data, ethical considerations and limitations involved as well as the importance of validity and reliability regarding research instruments. The next chapter is concerned with the data analysis.

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CHAPTER 4:   FINDINGS

4.1.   INTRODUCTION

This chapter deals with the presentation of the findings/data from the checklists and the interviews of the four key informants. The data are presented as descriptive statistics, using percentages to calculate parameters, frequency distributions and cross tabulation were also used (Blanche & Durrheim 1999:98-101).

The findings are from the three institutions namely the National Laboratory, known as the Namibia Institute of Pathology, the Cancer Association of Namibia and the Dr. A.B. May Cancer Care Center, as well as from the four key informants.

4.2.   Pap smear screening programme

The following section goes about the analysis of the data from the Namibia Institute of Pathology (NIP) and that from the Cancer Association (CAN) together.

4.2.1.   Target population

4.2.1.1. Number of specimen taken

A total number of 32 085 Pap smear specimen were taken and screened between January 1999 and December 2001 (24 630 from NIP and 7455 from CAN). This represents only 5.7% of women age 15 and over in Namibia.

The total numbers of smears by year were 11 941 for 1999, 10 602 for 2000 and 9459 for 2001. Overall, there has been an decline in the number of Pap smears taken every year, and as indicated in Figure 2, the percentage of Pap smear specimens taken by CAN appears to increase every year, while those at NIP decrease.
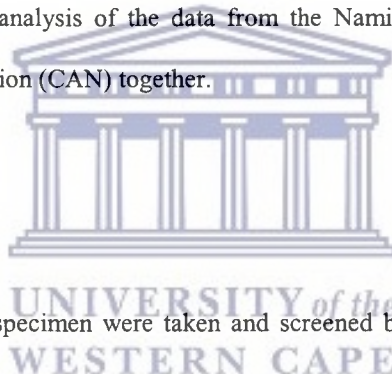
Figure 2.   **Frequencies of pap smear specimen by institution by year of examination**
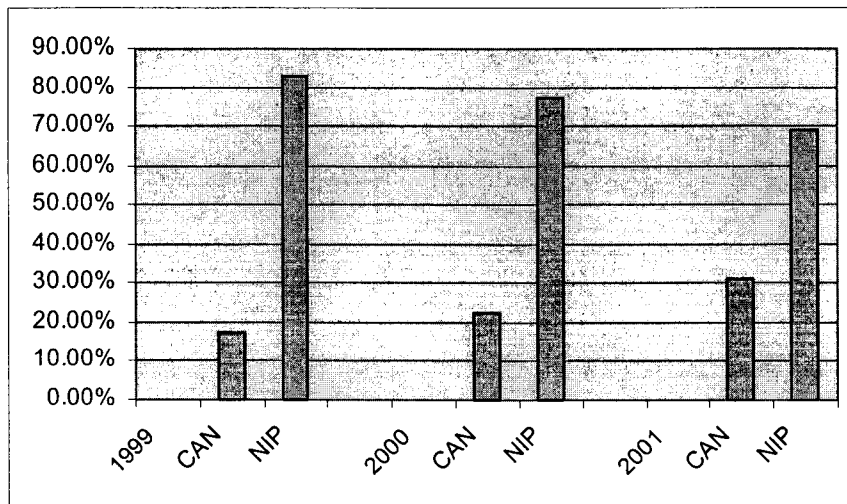
4.2.1.2.   *Region of origin*

As indicated in Figure 3, out of the total sample of 3268, the highest numbers of specimens (687) were received from Khomas (21%), followed by 470 from Erongo (14.4%), 467 from Oshana (14.3%), 452 from Oshikoto (13.8%) and 343 from Omusati (10.5%). The lowest 5 were from Caprivi (0.2 %), 22 from Kavango (0,7 %) and 37 from Omaheke (1.1%). For the rest five regions namely Otjozondjupa, Hardap, Ohangwena, Karas and Kunene their specimens ranged between 90 and 217 (2.8% - 6.6%).

Figure 3:   **Frequencies of Pap specimens by region**

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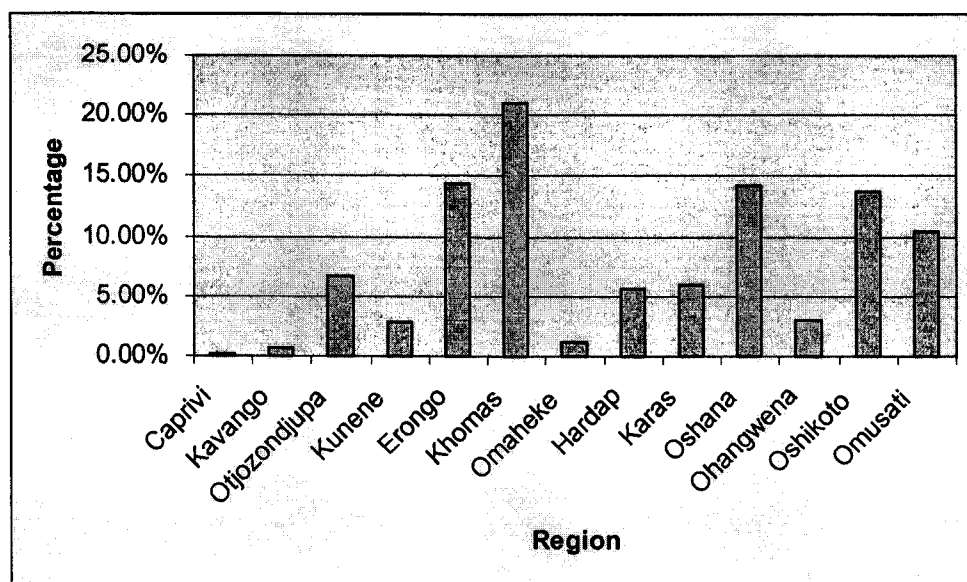
The Cancer Association does not cover five regions namely; Caprivi, Kavango, Oshana, Omusati and Ohangwena, due to logistical problems.

4.2.1.3. *Age category of women who's Pap smear were screened*

Table 4 shows the age distribution of women who's Pap smears were screened. Out of the total 3268 specimen screened, 182 did not indicate the age or date of birth. The numbers of women screened were found to be highest in the age group 30 - 34 years of age with 18.4%, followed by age group 25 - 29 years of age with 18.2%, age group 35 - 39 with 15.1% and age group 20 - 24 with 14%. The age group 10 – 14 was the lowest with 0.2 %.

Table 4.   Pap smear specimens taken by age group

Age group	Frequencies
10 – 14	4 (0.1%)
15 –19	125 (4.1%)
20 – 24	432 (14%)
25 – 29	562 (18.2%)
30 – 34	567(18.4%)
35 – 39	466(15.1%)
40 – 44	302 (9.8%)
45 – 49	221(7.2%)
Above 50	407 (13.2%)
Sub total	3086 (100%)
Total	**3268***

- *182 out of 3268 records (7%) did not have the age or date of birth indicated

Translating these sample percentages to the total population would suggest that 10 299 women in the high-risk age group (i.e. 35-49 years) were screened during the study period. Thus only 7.7% of 132 700 women in this age group were screened.

It was noted that the women screened by the CAN tended to be older than those screened by the public health facilities, with the highest percentage of women from CAN being in the 50 years and older group (28.1%), while for the public health facilities it was the 20-29 age group (20.3%).

4.2.2. Reasons for screening

Figure 4 illustrates the various reasons for screening. These were derived from the clinical history as indicated in the laboratory requisition form by the health worker who took the specimens and completed the requisition form. A total of 380 out of 3268 records did not have information on the reasons or clinical history of the patient.

Out of the remaining 2888, 675 (23.3%)Pap smears were taken as a routine for post natal care services clients, 118 (4.0%) Pap smears were taken as a routine for ante - natal care services clients, 321(11.1%) Pap smears were having signs and symptoms related to reproductive system health problems for which Pap smear will be one of the diagnostic procedures required, 42 (1.5%) Pap smears were taken after a client was referred and 1677 (58%) Pap smears were taken as a routine or a follow up procedure.

Out of the 793 women whose Pap smear were taken due to ante and postnatal care services, 166 (20.9%) were in the age group of 35 – 49 years old.
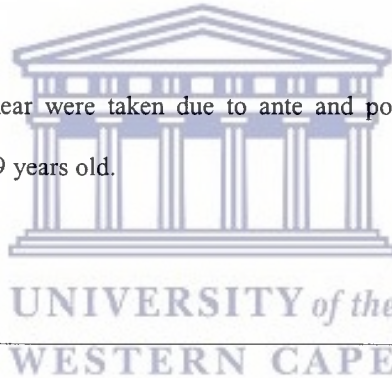
Figure 4:   **Reasons for Pap test**
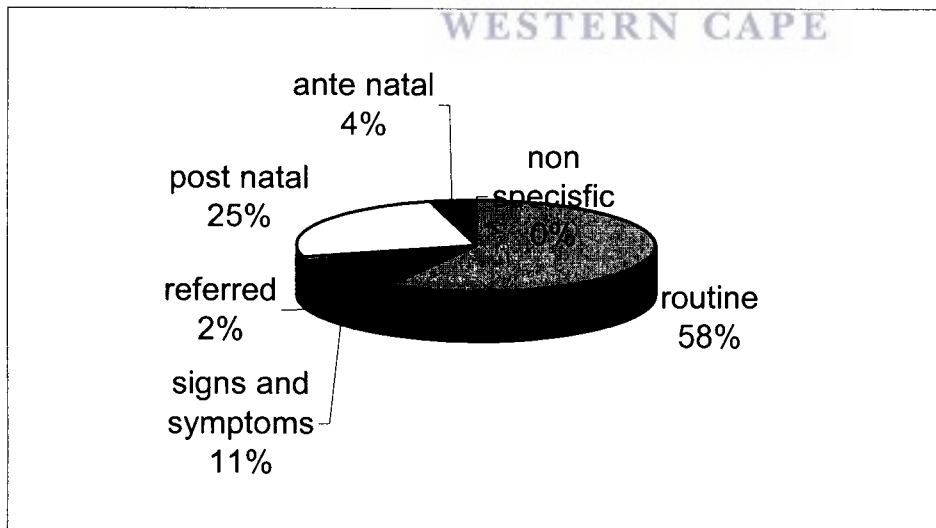
It must be noted that for the Cancer Association, the registers do not reflect the reasons for the Pap smears being taken. According to the registered nurse who is dealing with these specimens, essentially all their clients are routine examinations. They inform the clients about the dates of these mobile clinics beforehand in all those regions they will visit. They are only dealing with routine Pap smear

examination, as they are not a health facility. For the purposes of the above analysis all CAN smears were included in the routine category.

4.2.3. Quality/ Condition of specimens

Out of the total 3268 specimens screened, 23 records did not indicate or state anything about the quality of the specimen, however the remaining 3245 specimens indicated the quality of the Pap smear specimen. 1479 (45.6%) out of the 3245 Pap specimens were not representative, it means there were no endo-cervical cells present. On some results forms even when there are no endocervical cells present, other abnormalities such as infections could be detected, however it still needs to be repeated.

Forty nine of the Pap specimen (2%)were unsuitable: it means that slides got broken on the way or during the procedure or the slide got missing or the specimen is damaged that it could not be screened. For this only repeat of the specimen was recommended.

The highest number of specimens that lacked endo-cervical cells was reported from Caprivi (80%), Omusati (74.8%), Kunene (67.8%) and Kavango (57.1%). Except for Omaheke which reported the lowest (13.5%) that lacked endo-cervical cells, all the other eight regions reported between 27.6% – 50.8% of specimens that lacked endo-cervical cells.

However when it comes to specific institutions, there are some significant variations. All the absence of endo cervical cells was reported from specimen taken through the NIP and none from CAN. The highest number of specimens that lacked endo-cervical cells as reported through NIP was from Caprivi (80%), Kunene (80%), Omusati (74%), Omaheke (71%), Hardap (71%) and Oshikoto (60%). Except for Ohangwena, which reported the lowest 41% that lacks endo-cervical cells, all the other six regions reported more than half of their specimens, between 50% – 60%, lacked endo-cervical cells (see figure 5).

Figure 5.   **Lack of endocervical cells by region as reported by NIP**
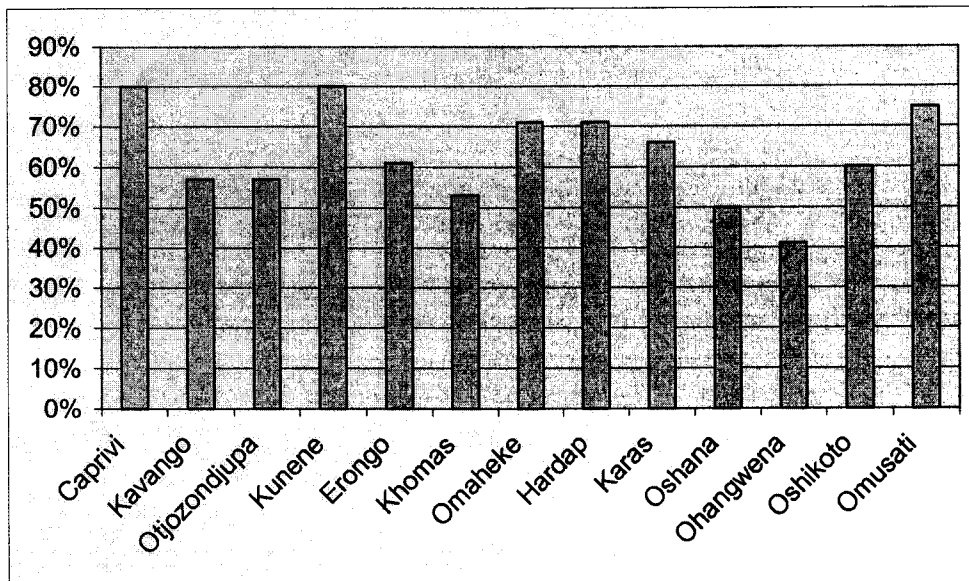
As indicated in figure 6, forty-nine (2%) specimens were unsuitable for screening, it means that the specimens were not adequate or the fixation medium used has interfered with the specimen, either by destroying it or too much was used. Also in some cases the slide was not available as it either got lost or broken.

Figure   6:   Frequencies by results
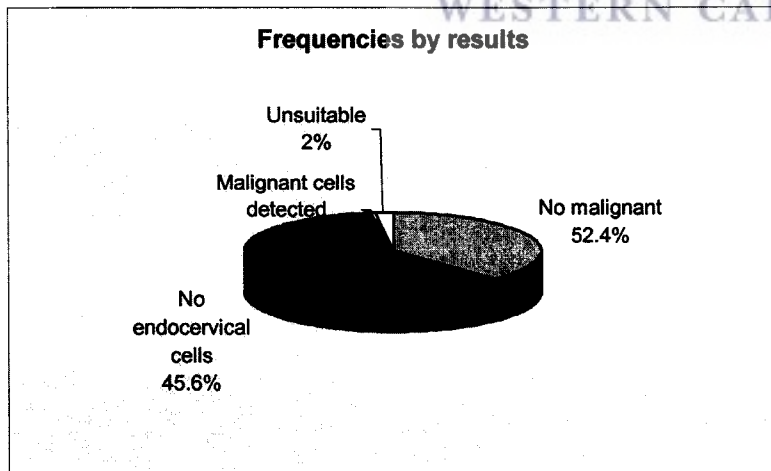
The Cancer Association register did not indicate any thing on the quality of Pap smear specimens. According to the registered nurse, there are few of their specimens, which are not representative of the endocervical cells; the majority of their specimens are representative. Unfortunately this perception could not be validated within the scope of this study.

4.2.4.   Early detection of lesions

Out of the total 3268 specimens reviewed, 23 records did not indicate the outcome of the screening except for the repeat recommendation. In 1702 specimens (52.4%), no malignant cells were detected.

In addition, the following abnormalities were detected: twenty-four dysplasias (0.7%), eighty-nine (2.8%) atypia, twenty-three (0.7%) Human Papilloma Virus infection and inflammatory cell changes in thirty-eight specimen (1.2%). CIN I was detected in six specimens, LSIL I in two and cancer of cervix in two specimens 0.2% of specimens.

Two CIN I was detected through NIP and four through CAN, while all the two LSIL I and two cancers were detected through NIP.

Apart from the cell changes, infections were detected in 618 specimen (19.2%) (95% CI 18.1% – 21.1%) of specimens. These included fungi, trichomonas, gardenella vaginalis and non- specific infections. Rates of infection over the three years period was 18.3% in 1999, 16.3% in 2000 and 23.8% in 2001.

4.2.5.   Follow - up of women with abnormal Pap smears

Out of the total 3268 records reviewed, 1337 and 1550 records did not indicate anything on previous cytology or hystopathology respectively. However, out of those who indicated something on previous cytology 1931, only 570 (29,5%) have had previous specimens taken and screened and 1361(70.5%) has never had a specimen taken previously. Of those who have had previous screening procedures, nothing more was written about the findings and follow - up of those screening procedure other than yes and no.

For those who are detected with abnormality, it was clearly written out on the result forms that the specimen should be repeated either after six months or annually. These are the forms which are returned to the health facility of origin. Disposition of results at the health facilities to the clients and follow-up of abnormal results in the health facilities was not unfortunately within the scope of this

project. However, one of the two women with cancer of cervix was found in the Cancer Care Centre register, indicating appropriate follow – up of potential severe disease. The other one could not be traced anywhere.

4.3. Cervical cancer

Review of the Dr. A. B. May Cancer Care Center registers was undertaken to determine the number of women diagnosed with cancer of the cervix from January 1999 to December 2001. These groups of women will include those who are diagnosed with localized lesions to those with invasive cervical cancer.

4.3.1. Number of women diagnosed with cancer of the cervix

The registers revealed that a total of 165 women were diagnosed with cancer of the cervix in the past three years. These are only those who were admitted and treated at the center, of which the majority are state patients. However there are those who were diagnosed and treated privately, and do not appear on these public health facilities registers, therefore a true population incidence cannot be calculated.

4.3.2. Region of origin

As indicated in table 5, out of the total number of 165 women diagnosed with cervical cancer, in forty-seven (28%) of them the region of origin, could not be traced. For the rest 118, they were distributed all over the country from all thirteen regions, however, the majority of those who were diagnosed with cancer of the cervix 19.5% were from Khomas, 12.7% from Omusati, 11.9% from Oshana and 8.5% from Oshikoto. Seven (6%) of the patients were from neighboring country, Angola. For the rest nine regions, each had between 4 – 7 patients diagnosed with cancer of the cervix.

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Table 5. Cervical cancer diagnosis by region

Region	Frequencies
Caprivi	4 (3.4%)
Kavango	4 (3.4%)
Otjozondjupa	6 (5.1%)
Kunene	5 (4.2%)
Erongo	4 (3.4%)
Khomas	23 (19.5%)
Omaheke	7(5.9%)
Hardap	6 (5.1%)
Karas	7(5.9%)
Oshana	14(11.9%)
Ohangwena	6(5.1%)
Oshikoto	10(8.5%)
Omusati	15(12.7%)
Angola	7(5.9%)
Subtotal	118(100%)
Total	165*

*47 out of 165 records (28%) did not indicate the region.

4.3.3. Age category of women who were diagnosed with cervical cancer.

Figure 7 shows the age distribution of women who were diagnosed with cervical cancer. The number of women was found to be highest (61.2%) in the age group of the above 50 years old with 101 cases, followed by 45 – 49 years of age with 20 cases (12.1%), 40 – 44 years with 16 cases (9.7%), and 35 – 39 years with 14 cases (8.5%). The age group 15 – 19 years old was the lowest with only one patient (0.6%).

Figure 7:   **Frequencies of cervical cancer by Age group**
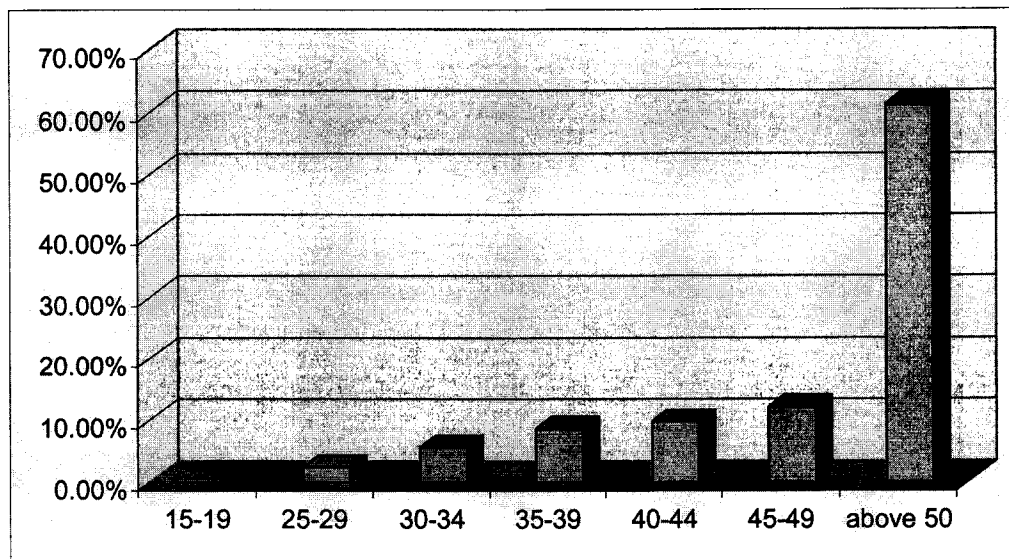
4.3.4. Early Diagnosis

Out of the total 165 records reviewed, nothing was mentioned about previous screenings or hystopathologies. This information was missing even from the patient's files as these files were only compiled at the time of admission in the center.
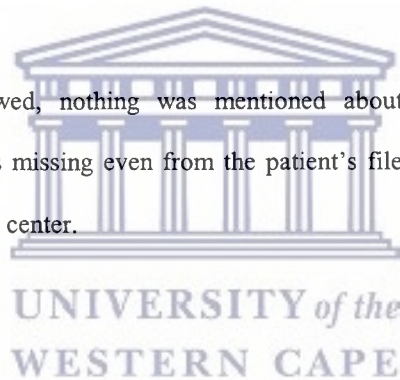
4.3.5. Results of the screening

According to the clinical history, all of them presented with either abnormal discharge or bleeding from the vagina and Pap smear specimens were sent to the laboratory at the time of presentation to the Cancer Center. Out of the total 165 records/files reviewed, all result reports confirmed the diagnosis of cervical cancer or invasive cervical cancer.

4.3.6. Follow – up of Cervical Cancer Cases

All are being treated according to current Cancer Center guidelines based on the stage of the invasion. Those in stage I one, total abdominal hysterectomy is done, for those in stage II and III, radiotherapy is recommended and for those in stage IV, only palliative treatment is recommended.

4.4. Interviews with key informants

Four key informants, one from each institution were interviewed to determine their knowledge, attitude, practices and perception regarding the Pap smear programme in Namibia.

4.4.1. Laboratory Key Informant.

She worked for the past nine years in this laboratory, was trained in basic cytology at Groote Schuur. Still studying for her diploma in cytology to qualify as a cytologist.

4.4.1.1. Pap smear specimens

The laboratory technician was asked about the number of specimens they are receiving annually. According to her opinion they used to receive about 10 000 per year, however it is becoming lesser and lesser every year. The reason for becoming lesser is being attributed to the role the Cancer Association is playing with their mobile Pap smear clinics to the regions. The technician assumes that some women are utilizing the Cancer Association services.

4.4.1.2. Problems encountered with Pap smear specimens

Some of the major problems they encountered with specimens are the breakage of slides due to the way they are transported from regions. Another problem is that of inadequate specimens taken and or wrong or unsuitable spray used for fixation. All these will result in the specimen not suitable for screening and will require a request for repeat.

Another major problem is that of lack of endo-cervical cells in some specimens. If there are no endocervical cells, it may be difficult for accurate results, and the only alternative will be to repeat the Pap smear procedure again.

According to her own opinion, the problem seems to lie with health workers who are responsible to collect these specimens. They need to be trained on how to correctly take Pap smear specimens. There is also a need for national guideline on how to take Pap smear specimens.

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To address this issue of poor quality specimens, on their side as laboratory personnel, they developed a simple guide on how to take a proper specimen and sent it to all health facilities.

4.4.1.3. Testing methods

For the past three years they have been only using one type of testing which they call conventional method /Papanicolau test. However, as from last quarter of 2001, they stopped to do the testing in Namibia, they are now sending their specimens to Bloemfontein Laboratories in South Africa. This was due to the fact that they don't have a qualified laboratory cytologist anymore, who could do the testing.

4.4.2. Dr. A. B. May Cancer Care Center Key Informant

Due to her expertise in the field of cancers including cervical cancer and as Head of the Medical Oncology in Namibia, the medical officer was interviewed to share her experience in the field. She is trained as a Medical Doctor with MBCHB degree. She has been working at this center for over twenty years as from 1980.
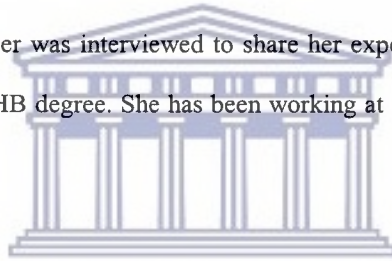
4.4.2.1. Incidence of cervical cancer

When asked about the number of cervical cancer diagnosed annually, the response was that between 90 and 100 invasive cervical cancer are diagnosed every year. To be specific, in 1999, 114 new cases of cervical cancer, in 2000 it were 90 cases and for 2001, she does not have the exact figure. This is due to the reason that some institutions did not give all their annual reports yet. However, she stated that the number is decreasing every year. She attributed the decrease to poor Pap smear screening programme as it is supposed to increase due to the HIV epidemic.

4.4.2.2. Treatment and follow – up

When asked about the management of those who are diagnosed positively, the response was that all are being treated according to the stage of the invasion. Those in stage I one, total abdominal hysterectomy is done, for those in stage II and III, radiotherapy is recommended and for those in stage IV, only palliative treatment is recommended.

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4.4.2.3. *Pap smear screening programme in Namibia*

When asked about her own opinion regarding the Pap smear screening programme in Namibia, and what should be done to improve it, the medical officer stated that it does not really appear to exist. Less is being done, women do not seem to know the importance of the Pap smears screening programme. Health workers are also not doing their part, that of creating awareness among women to demand for the services. She also suggested that awareness creation programmes in different media such as radios, TV and newspapers could contribute to the better understanding of the women population.

Ideally, according to the medical officer, Pap smear screening should be done regularly on every woman of reproductive age in Namibia.

4.4.3. Cancer Association Key Informant

A registered nurse with General Nursing and Midwifery diploma. She has undergone on job training course in Pap smear screening. She has been working at the Association for one year. She is in charge of all the activities that are going on including collection of Pap smear specimen as well as conducting mobile clinic for Pap smear screening once a year at 22 sites in eight regions.

4.4.3.1. *Number of Pap smears taken per month/year*

The registered nurse was asked about the number of Pap smear specimens she takes monthly or annually. About 80 Pap smear specimens are taken per month in the head office in Windhoek. On top of that, they also travel to the eight regions with mobile Pap smear clinic once a year visiting about 22 sites. Women are told beforehand about these mobile clinics, and they pay five Namibian Dollar for these examinations. (One Namibian dollar is equivalent to one South African Rand). According to the registered nurse, she is taking more specimens every year; the numbers of women coming for Pap smears are increasing every year.

4.4.3.2. *Problems experienced with Pap smear screening programme*

Although the attendance at the Cancer Association clinics is increasing annually, when asked about problems she experienced, the registered nurse feels that, not all eligible women are really coming for

the tests. This poor turnout she attributed it to ignorance, lack of knowledge and fear of the results and diagnosis among some women.

4.4.3.3. Guidelines for Pap smear procedures

The Registered nurse is not aware of any Namibian guideline or protocol on Pap smear screening programme.

Her understanding is that all women who are sexually active should go for Pap smear screening once a year, those who have had hysterectomy should go twice a year and those with abnormal result, the smear should be repeated after six months.

4.4.3.4. Handling of Pap smear specimens

As a non – governmental Organization, the Cancer Association of Namibia does not send their specimens to the national laboratory in Namibia. They send theirs directly to Cape Town at Michelle Mento Laboratory. Women are given dates to come back for their results, however those with abnormalities are notified telephonically to come back and in severe cases, their doctors are contacted to assist.
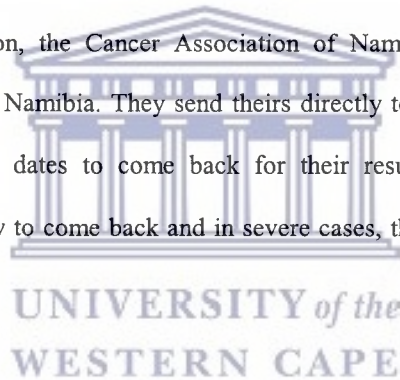
For the normal results, women are reminded to come for the test annually, and when necessary.

For those results from mobile clinics, the Association has some contact with qualified health workers be a nurse or medical doctor in each site. Efforts are made to record all the necessary contact information from the client on the day of the clinic, and this is how they send the results to them, either through the nurses or doctors at a specific site. Some times these health workers assist them during mobile clinics.

4.4.3.5. Pap smear screening programme in Namibia

When asked about her own opinion regarding the Pap smear screening programme in Namibia, and what should be done to improve it, the registered nurse said that it is far from satisfactory. There is still more to be done, such as awareness creation among women to demand for services. Health facilities

should also do much and be client friendly to attract women and to give more education on the importance of Pap smear screening especially in the rural areas.

4.4.4. Health Information System Key Informant

The Health Information System (HIS) Programme manager was interviewed to shed some light on the accuracy of information collection and gathering. They are responsible for all the data from public health facilities. She is a registered nurse with a diploma in General Nursing and Midwifery, however, she is also trained in Health Information System. She has been working in this programme for eight years.

4.4.4.1. Number of Pap smear taken per month/year

The HIS manager was asked whether they do receive information regarding the number of Pap smears taken. The response was that Pap smear screening was never recorded through HIS in the past. However as from 2001 it is now included. As it was only started last year, she cannot really say much about trends as there is nothing to compare with in the past, however by 2003/4, one will be able to see the trends.

4.4.4.2. Number of cervical cancers diagnosed

All cancers are reported through HIS as well as the number of those who died from which cancers. They receive this information from the Cancer Care Center, so the numbers are the same as reported by the Cancer Care Center.

4.4.4.3. Pap smear screening programme in Namibia

As a qualified registered nurse, she cannot recall any specific guidelines on Pap smear screening programme in Namibia. However she thinks that Pap smear screening is very important in a woman 's life, and should be strengthened or improved. She is also of the opinion that less is being done in this field and women seem not to be aware of the importance of the screening. Awareness creation on the importance of Pap smear screening is one of the best methods she suggests that will improve the programme.

4.5.   Summary

In this chapter data was analyzed and explained in detail to give meaning to the statistical values. The next chapter will discuss the findings and highlight the important facts in order to draw conclusions and to make recommendations.

CHAPTER 5:   DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter addresses the primary research questions as mentioned earlier regarding the status of the Pap smear screening programme in Namibia:

- Coverage of the target population

- Early detection of lesions

- Quality of specimens taken

- Reasons and frequency of Pap smears taken

- Follow – up of women with abnormal Pap smears;

and makes conclusions and recommendations regarding this programme.

5.1.   Coverage of the target population

The assessment has been carried out in three of the most important and major health facilities dealing with cancer in Namibia. As Namibia does not have a specific guideline on Pap smear screening, the target population will be all eligible women of reproductive age and over which in the Namibian context are 15 years old and over.
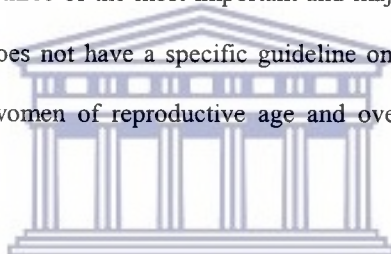
5.1.1.   Number of women screened for the past three years

The total number of women screened over a period of three years, seems to be relatively small. Having in mind the approximate number of women 15 years and over, 32 085 Pap smears represent only 5,7% of women in this age group, which is very far from the expected global target of 80% as stipulated by the World Health Organization. These rates could be an under-estimate of coverage as they are only for 3 not 5 years and do not include the private sector, or an over-estimate as some of these smears may be repeats due to the high number of poor quality specimens which subsequently recommend a repeat exam.

Although 5.7% is within three years, the figure is not very far from the 1985 World Health Organization estimates that indicated that in developing countries only about 5% of women had been screened for cervical neoplasia in the previous five years. If we extrapolate to a possible 5 year rate, it means that each year only 1.8% of women over 15 years are screened in Namibia, and this figure will give us 9% in five years which is better than the global estimate.

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However, the fact that no matter which denominator being used, 80% is out of reach. This is just an indication that Pap smear coverage is very low in Namibia and drastic steps should be taken to cover even just 50% of the target population.

It is also worth noting that it seems that with public health facilities each year the numbers are decreasing, while for the Cancer Association, the number of women coming for Pap smear screenings are increasing every year. This could be attributed to the fact that the Cancer Association has embarked upon the approach of taking the services to the people with their mobile clinic while the government is using the fixed facility system. Thus, for a client, it is very much logical to go to the mobile clinic, which has come to your premises, than to go out of your premises to look for the clinic. For example, the Cancer Association takes these services to Universities, colleges, shopping malls, banks and all big companies that agreed to work together.

Other contributing factors stated through the discussions with key informants, is that at public health facilities, health workers are not very much accommodative to patients, which makes some women feel uncomfortable to go for services.
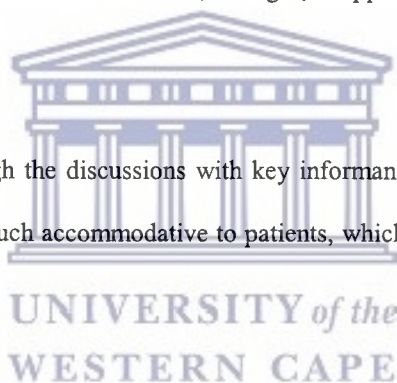
The 165 women who were diagnosed with cancer of the cervix in the past three years, is also questionable as there might be those women who were diagnosed and treated privately, and do not appear on these public health facilities registers. Thus the number might be more than what is reflected by the admission records of this center.

Nevertheless, this is a significant number especially when the total population is so small and we have a screening programme in place. Another concern is also that these women are only those who were admitted in the center, what about those who were never referred due to the fact that the disease has already advanced and there is no need to send them very far from their families rather than to keep them in nearby health facilities?

If the screening programme started about thirty years ago, some of these women could have been covered somehow somewhere, and maybe the number would have been lower. From these we can only conclude that the programme is not reaching all the eligible women and mechanisms should be put in place to improve the coverage.

5.1.2. Regions of origin

There are a number of variations in the number of specimen received from regions. Some regions appear to have sent in more specimen than others. As expected, more specimens came from those well known over - populated regions from the northern part of the country as described, thus the reason is clear. This could be attributed to the fact that there is a difference in population size in each region as described in the introduction.

Another possible reason for high turnout in industrialized regions such as Khomas could be the fact that, transport wise, it is also easy for women to travel to go for services and medium of information to reach women is better in these big cities as comparing with rural areas.

However there are also regions with high population such as Kavango, but the specimen they send in are very small. This is questionable. One explanation to this phenomenon could be the fact that some regions are mostly rural with poor infrastructures with regard to transport and dissemination of information. One may assume that some of these factors may have contributed to the lowest turnout of clients.

Although in reality the numbers are small, it can be assumed that with better awareness creation among women, the numbers may increase dramatically, especially in those regions where there is some positive attitude.

As it was noted earlier, the Cancer Association does not reach five other regions namely, Caprivi, Kavango, Oshana, Omusati and Ohangwena. Even the private sector is rare in these regions. For the female population in these regions they are entirely dependent on the public health facilities to access these services. Thus health workers in those regions should come up with a strategy to ensure that all eligible women are aware of the services.

Consistent with the findings of the number of Pap smear specimen taken, the majority of women diagnosed with cancer of the cervix were also from the three northern regions and Khomas region which is the highest populated region in the whole country.

One could expect that from the regions where the number of Pap smear specimens taken were the highest, then the incidence of cervical cancer would be lower, as the pre - cancerous lesions would be detected and treated earlier, however, in this case it appears opposite. This is likely due to more screening in these regions, which leads to more cases being diagnosed, and not that there are more cases per population, just more detected. Without adequate screening coverage, it will be difficult to determine actual incidence of disease across regions.

There is also a possibility of patients when referred for treatment will use a local address in the area of the health facility rather than their original address, which may skew results, especially when it comes to some regions such as Khomas.

From the above-mentioned information, it can be concluded that all the regions are not covered equally and proportionally, thus for success there is a need for a multi – sectoral approach. The Government through the Ministry of Health and Social Services, the private sector and the Cancer Association should work hand in hand in order to reach all the eligible women as well as to support each other and to complement each other in this effort.

5.1.3. Age category of women covered.

The highest 54,8% specimen were taken from the age group of under 35 years old , which means that only 45.2 % were 35 years old or older which includes the high risk target group of 35 – 50 years old. This means that the majority of clients is in their childbearing years and may or may not necessarily come for the Pap smear screening per se but for pregnancy or family planning related services. However, as Miller (1992:33) stated, this is also a good opportunity to raise awareness among women on the importance of Pap smear screening and may encourage them to continue even after when they have completed childbearing.

Examining the coverage of high-risk women (e.g. age >=35 to less than 50 years) we saw that only 7.7% women in this age group were screened during the last three years. According to the World Health Organization, all women should go for Pap smear screening at least once between the ages of 35 and 50 years of age and developing countries or countries with limited resources should aim at screening 80% of the women between this age group, and countries with inadequate resources should focus on a screening programme that will reach women between the ages of 35 and 50 at least once.

Although according to the proceedings of the Kenya meeting (Abwao, 1998:46), it was agreed upon that women who are 35 years old and older should be the target for screening programmes in the East and Southern Africa region, I am of the opinion that that the target should be specific. This is due to the fact that we may still end up with women coming for Pap smear because they are symptomatic. That's why I tend to agree with the recommendations of targeting women between 35 and 50 for screening (Outlook 1998, PATH 2000, Sankaranarayanan 2001). This specification will facilitate great awareness among women, just like what is being done for immunization.

To have no limit, women will relax as long as they know that they are above 35, even at 65. However we do not want women to go so far as by this time it may be too late for early detection.

The study has find out that the incidence of cancer of cervix is the lowest in the age group of less than 34 years old and starts increasing dramatically at the age of 35 years old with 61,2% occurring in the above 50 years olds, and 83% of those diagnosed with cancer are 40 years and older. Although the finding from this assessment appears to be too high, it is almost similar with some other findings that the chances of dying from cervical cancer increases, as women get older, and the burden of cervical cancer occurs around the peak age of 47 (Lawson 1998: Ponten et al 1995: Chirenje et al: 1998).

From all the findings as stated above regarding coverage, one can only conclude that the Namibian Pap smear screening coverage, is very low and all eligible women are not totally covered. This finding is similar with the findings from the study conducted by Chirenje et al (2001) in Kenya, Lesotho, Uganda, Tanzania and Zimbabwe, that, although most countries are having measures in place to provide Pap

smear screening, coverage was extremely low in all countries and women frequently presented with an advanced stage disease.

5.2. Reasons and frequency of Pap smears

The fact that only few women seek routine preventative Pap smear screenings is worrisome. Some contributing factors to poor turnout as identified by the one key informant, is that women do not come for Pap smear screenings due to ignorance and fear of the results and diagnosis. Thus if there is nothing bothering them, why should they worry? This concern among women was also noted by Lazcano – Ponce et al (1999) study, that stated that women tend to seek screening only when they are symptomatic rather than as a preventative measure.

The same study also found out that women feel uncomfortable at public health facilities, as they are impersonal and lack privacy. This is consistent with comments from the nurse in this study, who also mentioned that some clients prefer to go to the association, because at public health facilities they feel uncomfortable.

For those women whose screening is related to child bearing, one is not sure whether they will continue with routine pap smear screening programme when they stop having children. Some researchers argue that using ante and post natal care services for cervical screening has some benefits, which I agree with, however, the fact that the numbers are decreasing after reproductive years is a matter of concern, as the risk of developing cervical cancer increases with age.

Specific from the findings of this study, only a few of women who are in the target group (35 – 50 years old) were screened due to ante –and postnatal care services. This means that by the age of 35 years old, most women has finished with their families and the strategy of capturing some women during ante and post natal period, may not be fruitful, still just cover the pre – risk group.

However the picture is different with the Cancer Association where most of their clients if not all seeks the services as a preventative measure as they are not a health facility and the majority are 35 years old and over.

As for the frequencies of Pap smear screening, it was not clear from the data how often these women are being screened as some of the forms are incomplete and all the necessary information was not recorded.

The key informants propose that screening should be done annually, regularly or three yearly, even for those who had hysterectomy, which I do not agree with. This is acceptable from them as each one of them is trying to use their common sense in the absence of the national standard or guideline. However, in my own opinion, for a developing country like Namibia, having in mind resources available, we can still screen according to the WHO guideline, trying to reach at least once 80% of women between the ages of 35 – 50, this means that instead of screening frequently, we should try to cover more women who are at risk and the screening should be integrated in other existing services.

This approach is also supported by Sankaranarayanan (2001) and Miller (1992:22-23) due to the fact that there are many competing health problems on the continent that needs attention.

From these one can deduct that health workers should strengthen their health education and awareness creation programmes on the importance of Pap smear screening among the community to encourage and motivate women to demand for the screening services, particularly in the high risk age groups.
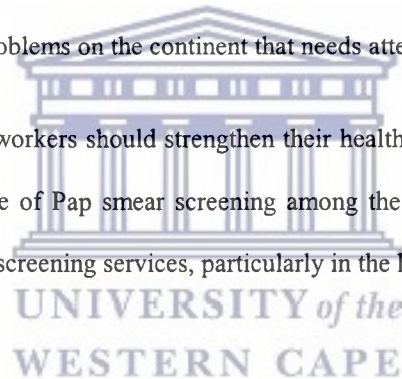
5.3.   Quality of specimens taken

Absence of endocervical cells in the 45% of the specimen is a matter of concern as this means a wastage of resources through repeated examinations. This is even worse with the specimen from the public health facilities, where 59.5% of their specimen were not representative. Apart from lack of endocervical cells in the specimens, there is also an issue of unsuitable specimen, which could not be evaluated. All these problems were also noted by the key informants, and the contributing factors seem to lie with health workers who are responsible to take the specimens.

This means that health workers who are responsible to take this specimens are not well acquainted with the procedure. This can be described to either lack of knowledge and skills, poor training, lack of guidelines and supervision, or lack of interest and ignorance on the part of the health workers.

In addition to the above, on cross tabulation, it was also discovered that, except for Ohangwena region with 40% of it's specimens lacking endo-cervical cells, more than half of all the specimen from the other twelve regions lack endo-cervical cells. This is a major concern when it comes to take measures to address and improve on the skills of the health workers. According to the findings it appears that the problem is in every region. However, one can prioritize and target those regions whose almost all their specimens are not representative such as Caprivi (80%), Kunene (80%) and Omusati (74%).

This finding further confirms the issue of poor or lack of skills among health workers. If the problem is almost everywhere, then the problem lies either in the training and or supervision and lack of guidelines.

Another problem is that of inadequate specimens taken and or wrong or had unsuitable spray used for fixation. All these will result in the specimen not being suitable for screening and will require a request for repeat.

Though not exactly the same, these findings are similar with the findings of Lazcano – Ponce et al (1994) in a descriptive study where he found out that 64% of the specimens taken lacked endo-cervical cells and false negative readings ranged from 10% to 54%.

On the other hand this has contributed to a lot of repeat recommendations (61.8%) and subsequently a waste of resources in terms of time used, personnel and equipment. Whenever there is a repeat of something, it is double work. Resources used for repeat tests could have been utilized on something else, and the major concern is that of the client who went through all the trouble to come for the result and to be told that she has to come back again for the repeat results. There is also uncertainty whether these women will ever come back for the results, especially when they are already struggling to come for Pap smears.

All these can also contribute to poor or low turnout of women for Pap smear screenings at public health facilities. Women will be discouraged and demotivated to come for the services.

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As it can be observed most of these problem seems to be related to health workers who are responsible for the collection of these specimens. Therefore, from these we can only conclude that, for the Pap smear screening programmes to be successful; there is a need for proper knowledge, and skills among health workers who are responsible for taking Pap smear specimens. This will enable them to take the specimens correctly, and also to give correct and appropriate information to the client and the community at large in order to create awareness on the importance of Pap smear screening.

It is very significant and worth noting that only NIP reported poor quality of specimen. This can be attributed to various factors. It should be kept in mind that all the specimens analyzed by NIP are from different health facilities in the whole country. This means that there are different health workers taking these specimens from each facility. However, at the Cancer Association, only one registered nurse is taking these Pap smear specimens and could be assisted by one or two other health workers, but still she is the one who is supervising the procedures.

An alternate explanation is that the Laboratory that analyzes the Cancer Association Specimen is not the same as the one that analyze the NIP specimen. One could expect differences.

Another possible explanation is that at Cancer Association, data was generated from the registers. These data were entered from the original copies of the laboratory requisition and result forms, thus it was secondary data, while at NIP, data was collected from the original copy of the requisition and result forms. The possibility of omitting by mistake some information when entering the data in the register is possible. The high quality of specimens from CAN needs to be confirmed either from the original lab reports or communication with the consulting laboratory.

Although some researchers argue that there is no connection between the presence of endocervical cells and the detection of lesions, in my own opinion, the presence of these cells are important. Absence of endocervical cells may contribute to false negative results, which at the same time may result in delays for early diagnosis and treatment of lesions. This was also suggested by Elias et al (1983: 225 – 229), Mauney et al (1990:18 –21), Kivlahan et al (1986: 258-260) and Mitchell et al (1991:741 –742), who

stated that lesions could be detected over two times more precisely when endocervical cells are present. Why do the laboratory technicians ask for the specimen to be repeated if they are satisfied?

Certainly there is a need for the health workers to be trained or to be refreshed on how to correctly take Pap smear specimens. There is also a need for national guideline in order to direct or guide all those who are involved in Pap smear screening programmes. This is also important for uniformity, as we are one country, therefore the services being provided should be the same everywhere, does not matter whether public or private facility or an NGO. The training was also emphasized in Preventing Cervical Cancer in low – Resource Settings in Outlook (1998:8), that health service providers need appropriate training on the technical and counseling aspects of cervical cancer prevention.

In conclusion, although there are some specimens that were of good quality, many of the specimens were of poor quality, and the problem appears to lie with the performance of the health workers taking the specimens. Thus training health workers in technical skills is a necessity.

5.4.   Early detection of lesions

During the record review, it was observed that several abnormalities were detected through Pap smear specimens ranging from infections to lesions. This is an indication of the importance of Pap smear screening. Most contributing factors to development of infections and lesions are known, such as bacteria and viruses. For not too severe infections such as bacterial infections, for sure these women, if they comply with the treatment regime, they will be cured totally. This is also the same with some viral infections.

If lesions are already present, they may develop further into cancers, however, if they are discovered and treated early, they may be cured. As confirmed by the findings, all these factors could be detected and managed properly.

The fact that six CIN I was detected in some specimens is very important. As it was already mentioned in previous sections, CINs are pre – cancerous lesions with the high probability of being treated and cured. Thus for these women who were diagnosed with CIN, their chance of survival is higher. This is

also a confirmation that Pap smear screening can detect lesions at an early stage while it is still treatable and curable, the move which is supported by Mitchell et al (1993).

Human Papilloma Virus plays an important role in development of pre - cancerous lesions such as dysplasias. Detection of HPV in the specimens is very important. By treating these infections as early as possible, prevent also that lesions may progress into cancers.

Although already discussed in the previous section, I think absence of endocervical cells in the specimen may be a problem in early detection of some pre – cancerous lesions. The problem is that for those poor women whose Pap smears were not representative, they may get false negative readings, which may delay them from being treated and managed properly. For those who are asked to return for repeat results, there is no certainty if they will ever come back, thus the possibility that they may turn up later with an advanced disease, cannot be ruled out.

This is not only the issue of health workers even with the laboratory technicians on their interpretation. This was also discussed by Yobs (1985) that a large proportion of diagnostic error may be attributed to laboratory error, due to the fact that false - negative and false - positive diagnosis were discovered.

Though not very significant, infections seem to be one of the major abnormalities detected and more prevalent among the sexually active group. The above described trend of infection rates seems to be fluctuating during the study period. It was expected that sexually transmitted infections would be going down, as people would increasingly use condoms in order to prevent HIV infections, however, there seems not to be any change. This trend needs to be closely monitored and can only be confirmed by data from future years. The trend is on both sides, laboratory and cancer association registers.

It is also worth mentioning, though not a primary research question, that women may not to come for Pap smear screenings due to ignorance and fear of the results and diagnosis as commented on by one key informant. This is similar to what Lazcano – Ponce et al found out in their 1999 study, in which they concluded that that in most cases, women may not go for pap test and receive abnormal results, in

order to avoid disapproval by their loved ones. They also found out that women feel uncomfortable at public health facilities, as they are impersonal and lack privacy.

For those women diagnosed with cancer of the cervix, it was difficult to relate the diagnosis to any of the factors in their lives, as there was nothing in their files regarding their previous Pap smear tests or previous history. It is possible that they may have never went for Pap smear screening programme as a preventative measure, they only went when they started being symptomatic as it appears in their files. This was found to be the case in similar African countries where Chirenje et al found that of all 196 cancer patient none of them had ever been screened, which is a sad story.

The issue of cancer staging, though very important, was not captured during this study at the cancer care center. Some of the patients had stages identified, however they were not accommodated for during the study as the aim was to identify CINs, which are lesions that can be detected and treated before it becomes cancerous.

It is worth noting that only NIP reported diagnosis of cervical cancer. This could be attributed to various factors as mentioned in the previous sections, that of different health workers taking specimen, different laboratories analyzing the data, way of entering the data in the registers, however, it could also be that due to the small size of the Namibian population, this could be a true picture of what is happening in Namibia. In addition, the cancer Association has a smaller population than NIP; thus their sample size was also smaller than NIP and therefore fewer cases of cancer would be expected.

Regarding key informants' opinion of the Pap smear screening programme in Namibia, and what should be done to improve it, the response was that health workers should take the lead in creating awareness among women to demand for the services. Awareness creation programmes in different media such as radios, TV and newspapers may help contribute to the better understanding of the women population.

In conclusion Pap smear screening plays a very important role in the prevention of cancer of the cervix, and every woman should have access to it. Pap smear screening can reduce the incidence of cancer by

early detection of pre cancerous lesions and infections. It should start early enough, however, in order for it to succeed, awareness creation among women and the community at large, should be strengthened. Thus in the Namibian case, considering the number of women screened per year, the number of rejected specimens and compare it with the total number in the country, early detection could have been more than what is really happening.

Pap smear screening programmes are not to detect cancer; they are to detect any abnormalities or precursors of cervical cancer that can be treated, to prevent occurrence of cervical cancer. This is what all women should be informed about, so that they may seek the screening even when they have no problems or symptoms.

5.5.   Follow - up of women with abnormal Pap smears

The fact that only 29,5% has had previous specimens taken and tested, and in most cases nothing more was stated on the outcome or result of that cytology test, except for the yes and no, is of serious concern. Previous test or cytology could have been a good yardstick in determining the follow up procedures being implemented. On the other hand, there is no certainty that those specimens, which were taken before, were suitable or maybe they were one of those which were not representative. Thus even if it is mentioned that they have had a previous Pap smear taken, it does not say much for those who want to know the impact of the programme and to measure it's success with regard to follow - up. It could have been better to know the results of those specimens.

There are no proper system of follow up; and some women who were supposed to be detected and rescued early may get lost within the system, only to appear later with invasive cancer.

Although it appears that there are some follow – up strategies in each institution, it is not clear whether these strategies are effective. The issue of poor record keeping and incomplete records is of more concern, when it comes to tracing women.

According to the Laboratory technician, on receiving the results, copies are made to all health facilities where the specimens came from, and it is expected that health workers when taking Pap smear

specimens, they are supposed to inform the women about the date when they should come back for their results. And upon receiving their results, follow – up should be according to their results.

However, the low number of previous cytology is an indication that the Pap smear screening programme is far from satisfactory, and a strategy for follow – up should be put in place to improve the situation. It appears that women either do not come for Pap smears and or those who come once they do not come back for follow – up due to the fact that they were not told or due to ignorance.

The other issue is that of incomplete records. There is a possibility that those health workers who are supposed to record the previous tests done, either they do not record it, or they do not ask the women if they ever had previous tests done.

The issue of some forms, which do not have any information on address or region, only the hospital or facility's address, is a big problem when it comes to follow - up clients if they did not turn up themselves. Incomplete records are unnecessary mistakes which can be easily improved. In my opinion there is nothing difficult to fill in a client's record, except for ignorance or poor insight on the importance of record keeping. By omitting this important information, health workers are contributing to the increase of cervical abnormalities and the delay in treatment or diagnosis, even cancer by not providing this information that could be needed in case of serious or abnormal result.

Another barrier could be attributed to the absence of national guidelines on Pap smear screening, because there is no uniformity on the whole screening programme.

Nevertheless, it was very much encouraging to trace one woman who was diagnosed with cancer of the cervix in the Cancer Care Centre registers. This is just an indication that there are some health workers who are trying their best regardless all the obstacles, and these are the one to be encouraged in order for the programme to be effective.

From the findings there is no clear information on how the different institutions are following up their clients. The fact that there is no guideline on the Pap smear screening programme, is already an

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indication that follow up mechanisms if available will not be the same everywhere. All these are confirmation of Chirenje's observation in Abwao (1998:40-42) that in most Eastern and Southern African countries there is low coverage, inadequate cervical screening, total lack of policy guidelines and poor record keeping.

5.6. CONCLUSION

Key informants all mentioned that the Pap smear screening programme is poor in terms of the services being provided. This is confirmed by the quantitative data if one considers the number of poor quality specimens taken and the follow-up mechanisms in place. The Pap smear screening programme should have a focus and a target. This could only be achieved through a well-organized screening programme. I tend to agree with Sankaranarayanan et al (2001) that for successful screening programme, especially in low and middle income developing countries, poor – quality cytology programmes should be re – organized to concentrate more on screening high risk women at least once or twice in their life time, aiming at covering 80% of the target population.

However, the assessment has shed some light on important issues regarding the Pap smear screening programme in Namibia. These are:

- Pap smear coverage is very low, not all eligible women are covered
- Pre - cancerous lesions are detected, however there is a concern on low turnout of women for screening.
- The quality of specimens taken are not satisfactory, skills on how to take pap specimen is needed from the health workers side.
- There are no proper follow – up mechanisms, especially in public health facilities.
- The fact that there are no national standard or guidelines on Pap smear screening programme; this is contributing to poor definition of the target population of the screening programme.
- There is a tendency of poor record keeping.

Key Informants

Although each one of them has some knowledge in the specific field, some of them seem not to be confident when responding to questions. This can be attributed to the lack of guidelines as they are

trying to respond according to their own expertise, however their knowledge, perception, attitude are appropriate, when one consider their level of education.

5.7. RECOMMENDATIONS

Continuous evaluation is crucial to the success of any programme. Comprehensive analysis of the existing situation should guide planning stages, so that programmes are oriented towards the most pressing problems among the population (WHO 1995:119). This study explores the status of the Pap smear screening programme and has identified some weaknesses on which the following recommendations were made, based on the major findings of the study..

5.7.1. Training of Health workers

All health workers in the practice should be trained to take adequate smears using a vaginal speculum and to perform and interpret a pelvic examination if indicated by patient's symptoms or by appearance of cervix (Miller 1992:30). Training can happen anywhere anytime however, it should be planned and emphasize the technical, managerial, interpersonal; and counseling skills. In – service training are very important as it will help them to update their knowledge, empower themselves to enable them to empower their clients (Clay 1992:16). This assessment found out that there are shortcomings with regard to techniques in Pap smear collections. **Therefore the study recommend that the Reproductive Health Programme within the Ministry of Health and Social Services, should develop an In – service training programs on Pap smear collection for all nurses and doctors.**

5.7.2. Training of Cytotechnicians

Pap smear screening programme will only be successful if there is a functional laboratory services with all the necessary human resources required to do the screening. This study found out that the majority of specimens are screened in South Africa due to lack of cytotechnologists. **Therefore the study recommend the Policy, Planning and Human Resource Development Directorate within the Ministry of Health and Social Services to encourage young people to go for training as cyto-technologists so that smears do not have to be sent to South Africa for screening.**

5.7.3. National Pap smear screening policy guideline

The development of national policy guidelines for cervical cancer control depends on assessing the extent to which the population is affected by cancer. *It should incorporate measures for prevention, early diagnosis, treatment options, definition of target group, frequency of screening, referral mechanisms and follow –up strategies.* It should also cover issues of training and continuous education of health workers as well as monitoring and evaluation strategies. It should also include the roles of other stakeholders in the field such as other institutions, NGOs and Private sector(WHO,1995:xvi – xvii). This study found out that there were no uniformity in the implementation of the programme, and this was due to the absence of the national policy guideline on Pap smear screening. **Therefore this study recommends that the Reproductive Health Programme within the Ministry of Health and Social services to spearhead the development of the national policy guideline on Pap smear screening in the country.**

5.7.4. Record keeping.

Details on the taking of smears and the process for recording the results and for follow up the patients are very important in the patient's life history. The importance of completion of every single information required may mean at times a situation of urgency. During this study, a lot of incomplete requisition forms, missing information and patient files were discovered. **Therefore this study recommends that the Reproductive Health Programme in collaboration with Nursing Services to plan on how to sensitize health workers on the importance of record keeping.**

5.7.5. Health promotion

Pap smear screening is part of the preventative and promotive activities. Not all women are aware of the service. This study found out that there was a low coverage in terms of numbers in comparing with the overall population. Although evaluating the health promotion component of the Pap smear screening programme was not included in this study, it was suggested by the key informants that there is a possibility that a number of women may not be

aware of these services. **Therefore this study recommend that the Reproductive Health Programme should develop an IEC strategy for Pap smear screening programme in order to create awareness among women. Patient education and media efforts are some of the strategies that can be utilized.**

5.7.6. *Multi – sectoral approach*

Cancer of the cervix, like any other diseases, is not the responsibility of Ministry of Health alone. This disease affects every body; therefore all possible organization may play their role in one way or another. The study found out that although the two institutions are both doing the same thing targeting the same population group, there is no close collaboration. **Therefore the study recommend that the Ministry of Health and Social Services should identify or establish a national – level working committee on cervical cancer to coordinate efforts and advocate appropriate action. Membership should be representatives from al relevant sectors, institutions and organizations.**

5.7.7. *Suggestion for another study*

The issue of lower coverage is very crucial as nobody knows what are the contributing factors. Although this study assumes that there is a possibility that women may not be aware of the services, it cannot be said for sure as no study was conducted to determine this. **Therefore this study recommends that a study should be conducted on the knowledge, attitude and practice among women on Pap smear screening.**

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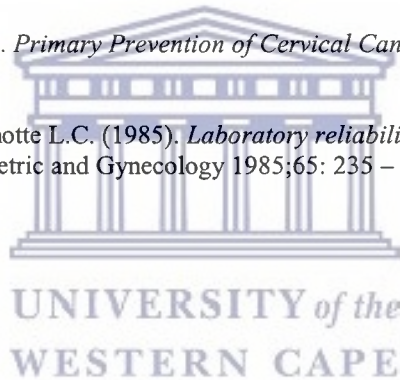
GLOSSARY

Atypia
Cells of undetermined significance that should be explored further for neoplastic features.

Cancer
A disease caused by cells dividing and multiplying in an uncontrollable way.

Cervix
A lower segment of the uterus that connect the uterus to the vagina.

Dysplasia
A pre – cancerous condition characterized by an increase in the number of cells formed which do not mature as expected, and changes the inside of the cells.

Endocervix
The mucous membrane of the cervical canal.

Endometrium
The inner layer of the uterus

Pap smear
A test in which a smear of vaginal or cervical secretion is examined for exfoliated cells to detect abnormal cells.

Screening
An examination of people for early stages in the development of cancer even though they have no symptoms.
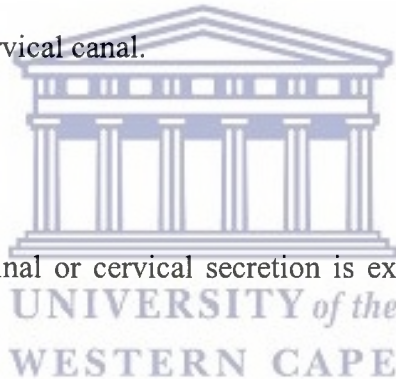
LABORATORY TECHNICIAN

1. Position

2. What is your qualification?

3. For how long have you been working here?

4. Are you trained to do this type of work?

    Yes

    No

5. If yes what type of training did you have?

6. According to your experience, how many specimens do you receive per month/year?

7. In your opinion, do you think you are receiving more or less specimen each year?

8. How soon do you start testing specimen after receiving them? Is there a time limit?

9. Is there a specific way of transporting or storage of specimen?

10. In which condition do you usually receive them especially those from the regions?

11. What type of problems are you facing with Pap smear specimen?

12. Is there a guideline on these procedures?

13. What do you do with the specimen results?

14. What type of test do you use for Pap smear?

15. Do you use more than one test?

    Yes

    No

If yes what are the others, and what is the difference?

16. What do you think is more accurate?

17. How do you record the specimen:

    - After receiving them?
    - After testing them?

CANCER ASSOCIATION NURSE

1.   Position

2.   What is your qualification?

3.   For how long have been working here?

4.   Are you trained to do this type of work?

         Yes

         No

5.   If yes what type of training did you have?

6.   According to your experience working here, how many specimens do you take per

         month/year?

7.   Do you take more or less specimen each year?

8.   What type of problems are you facing with Pap smear screening?

9.   Is there a guideline on these procedures?

10.   Where do you send your specimen?

11.   What do you do with the specimen results?

12.   What do you think about Pap smear screening programme in Namibia?

13.   What should be done to improve the screening programme?
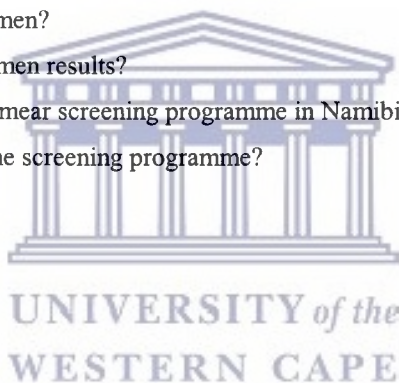
ANNEX 4

DR. A. B. MAY CANCER CARE CENTRE MEDICAL OFFICER/NURSE

1. Position
2. What is your qualification?
3. Are you specifically trained in oncology?
4. According to your experience, what do you think are contributing factors to Cervical cancer?
5. How many cervical cancers are diagnosed per year?
6. What do you do with those who are diagnosed positively?
7. Are the trends going up or down? Why?
1. Do you think Pap smears are contributing to the reduction of cervical Cancer?
9. What do you think about Pap smear screening programme in Namibia?
10. What should be done to improve the screening programme?

UNIVERSITY *of the*
WESTERN CAPE

HEALTH INFORMATION SYSTEM (HIS)MANAGER

2. Position

3. What is your qualification?

4. Are you specifically trained in HIS?

5. According to your experience, what do you think are contributing factors to cervical cancer?

6. Do you receive data/information on Pap smear screenings in Namibia? Yes/No

7. If yes, how many Pap smear screenings are taken per year/month?

8. Are the trends going up or down? Why?

9. Do you receive information on cancers diagnosed in Namibia? Yes/No

10. If yes, how many cancers are diagnosed per year/month?

11. Are the trends going up or down? Why?

12. Do you think Pap smears are contributing to the reduction of cervical Cancer?

13. What do you think about Pap smear screening programme in Namibia?

14. Are you aware of any guideline on Pap smear screening? Yes/No

15. What should be done to improve the Pap smear screening programme?
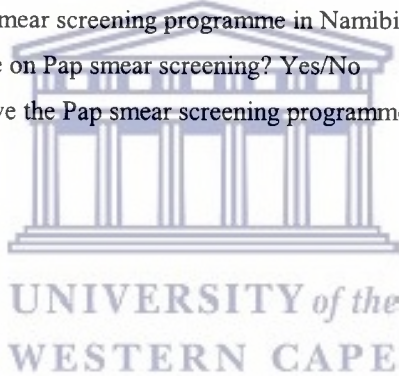
LABORATORY CODE BOOK

VARIABLE	CODES
ID NUMBER	0001 - 5000
REGION	CAPRIVI = 01 KAVANGO = 02 OTJOZONDJUPA = 03 KUNENE = 04 ERONGO = 05 KHOMAS = 06 OMAHEKE = 07 HARDAP = 08 KARAS = 09 OSHANA = 10 OHANGWENA = 11 OSHIKOTO = 12 OMUSATI = 13
HOSPITAL/CLINIC	
REGISTRATION NUMBER	
DATE OF BIRTH	DD/MM/YYYY
AGE	In years
YEAR OF EXAMINATION	1999 2000 2001
PREVIOUS CYTOLOGY	YES NO
PREVIOUS HYSTOPATHOLOGY	YES NO
CERVIX APPEARANCE	1 = NORMAL 2 = ABNORMAL 3 = NON - SPECIFIC
REASON/HISTORY	1 = ROUTINE 2 = ILL/SIGNS AND SYMPTOMS 3 = REFERRED 4 = POST NATAL CARE 5 = ANTE NATAL CARE 6 = NON SPECIFIC
RESULTS	1 = NO MALIGNANT CELLS SEEN 2 = NO ENDOCERVICAL CELLS PRESENT 3 = ABNORMAL 4 = CANCER OF CERVIX (CIN I, II, III, CIS, INVASIVE) 5 = UNSUITABLE (Broken, missing slides, damaged)
INFECTION	YES NO
DYSPLASIA	YES NO
HPV	YES NO
ATYPIA	YES NO
INFLAMMATORY CELL CHANGES	YES NO
RECOMMENDATION	1 = FOLLOW UP / ROUTINE 2 = REFERRED 3 = REPEAT 4 = TREAT

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CANCER ASSSOCIATION CODE BOOK

VARIABLE	CODES
ID NUMBER	0001 - 5000
REGION	CAPRIVI = 01 KAVANGO = 02 OTJOZONDJUPA = 03 KUNENE = 04 ERONGO = 05 KHOMAS = 06 OMAHEKE = 07 HARDAP = 08 KARAS = 09 OSHANA = 10 OHANGWENA = 11 OSHIKOTO = 12 OMUSATI = 13
HOSPITAL/CLINIC	
REGISTRATION NUMBER	
DATE OF BIRTH	DD/MM/YYYY
AGE	In years
YEAR OF EXAMINATION	1999 2000 2001
PREVIOUS CYTOLOGY	YES NO
PREVIOUS HYSTOPATHOLOGY	YES NO
CERVIX APPEARANCE	1 = NORMAL 2 = ABNORMAL 3 = NON - SPECIFIC
REASON/HISTORY	1 = ROUTINE 2 = ILL/SIGNS AND SYMPTOMS 3 = REFERRED 4 = POST NATAL CARE 5 = ANTE NATAL CARE 6 = NON SPECIFIC
RESULTS	1 = NO MALIGNANT CELLS SEEN 2 = NO ENDOCERVICAL CELLS PRESENT 3 = ABNORMAL (CIN I, II, III, SIL) 4 = CANCER OF CERVIX
INFECTION	YES NO
DYSPLASIA	YES NO
HPV	YES NO
ATYPIA	YES NO
INFLAMMATORY CELL CHANGES	YES NO
RECOMMENDATION	1 = FOLLOW UP / ROUTINE 2 = REFERRED 3 = REPEAT 4 = TREAT

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DR A.B.MAY CANCER CARE CENTRE CODE BOOK

VARIABLE	CODES
ID NUMBER	0001 - 5000
REGION	CAPRIVI = 01 KAVANGO = 02 OTJOZONDJUPA = 03 KUNENE = 04 ERONGO = 05 KHOMAS = 06 OMAHEKE = 07 HARDAP = 08 KARAS = 09 OSHANA = 10 OHANGWENA = 11 OSHIKOTO = 12 OMUSATI = 13
HOSPITAL/CLINIC	
REGISTRATION NUMBER	
DATE OF BIRTH	DD/MM/YYYY
AGE	In years
YEAR OF EXAMINATION	1999 2000 2001
PREVIOUS CYTOLOGY	YES NO
PREVIOUS HYSTOPATHOLOGY	YES NO
CERVIX APPEARANCE	1 = NORMAL 2 = ABNORMAL 3 = NON - SPECIFIC
REASON/HISTORY	1 = ILL/SIGNS AND SYMPTOMS 2 = REFERRED
DIAGNOSIS	1 = CIN I 2 = CIN II 3 = CIN III 4 = CANCER OF CERVIX (INVASIVE)
RECOMMENDATION	1 = FOLLOW UP / ROUTINE 2 = REFERRED 3 = REPEAT 4 = TREAT

LABORATORY CHECK LIST

NO	REGION	HOSPITAL/ CLINIC	REGISTRA- TION NO.	DATE OF BIRTH	AGE	PREVIOUS CYTOLOGY	PREVIOUS HYSTOPA- THOLOGY	APPEARANCE OF CERVIX	REASON HISTORY	RESULTS			RECOMMENDATION	
						YES NO	YES NO	NORMAL ABNORMAL	ROUTINE ILL REFERRED	NO MALIGNANT CELL SEEN	SPECIMEN NOT ENDO CERVICAL CELLS	CERVICAL SMEAR NOT NORMAL	FOLLOW UP/REFERRED	REPEAT

CANCER ASSOCIATION CHECKLIST

NO	REGION	HOSPITAL/ CLINIC	REGISTRA- TION NO.	DATE OF BIRTH	AGE	PREVIOUS CYTOLOGY	PREVIOUS HYSTOPA- THOLOGY	APPEARANCE OF CERVIX	REASON HISTORY	RESULTS			RECOMMENDATION	
						YES NO	YES NO	NORMAL ABNORMAL	ROUTINE ILL REFERRED	NO MALIGNANT CELL SEEN	SPECIMEN NOT ENDO CERVICAL CELLS	CERVICAL SMEAR NOT NORMAL	FOLLOW UP/REFERRED	REPEAT

DR.A.B.MAY CANCER CARE CENTRE CHECKLIST

NO	REGION	HOSPITAL/ CLINIC	REGISTRA- TION NO.	DATE OF BIRTH	AGE	PREVIOUS CYTOLOGY	PREVIOUS HYSTOPA- THOLOGY	APPEARANCE OF CERVIX	REASON HISTORY	DIAGNOSIS			RECOMMENDATION	
						YES NO	YES NO	NORMAL ABNORMAL	ROUTINE ILL REFERRED	CIN I	CIN II CIN III	INVASIVE CERVICAL CANCER	FOLLOW UP/ TREATMENT	REFERRED

DATE:
CONFIDENTIAL CHECKLIST

NO	NAME	REG.NO.	D O B	AGE	REGION	HEALTH FACILITY	LAB.	DR.A.B. MAY	CAN. ASSOC.