

## CHAPTER 2

### Literature review

#### 2.1 INTRODUCTION

Screening is accepted and used as a valuable tool for health care professionals, particularly as health care delivery moves towards preventative interventions (Edelman & Mandle 2002:228). Gray (1995:685) states that the "incidence of cervical cancer has decreased significantly since the 1960s. It has been suggested that this is in part due to the effect of screening by cervical cytology, which has encountered the rise in incidence which would be predicted from analysis of risk factors." The screening problem confronts physicians, public health officers, and other health planners.

The most effective way of preventing the prevalence of cervical cancer aims at early detection and treatment of precancerous lesions before they progress into the most severe, aggressive and life-threatening diseases (Sankaranarayanan, Budukh & Rajkumar 2001:955). This is secondary prevention and is made possible by the natural history of the disease. In South Africa, efforts have been made to strengthen and expand the national programme for cervical cancer awareness and screening. However, the approach in the screening programme initiated by the DOH in 1999 focuses mainly on public health provision. Private health care providers and private patients were left out and as a result are faced with barriers other than socio-economic factors that impede screening.

#### 2.2 PURPOSE OF THE LITERATURE REVIEW

The researcher conducted the literature review to acquaint herself with the research problem. The literature review revealed that little has been written on the factors in private health care provision that influence the implementation of cervical cancer screening programmes. However, much has been written on factors that influence the attendance of cervical screening programmes among women. The literature informed the researcher about the impact of cervical

cancer, the importance of cervical screening and the responsibilities of medical practitioners in the cervical cancer screening programme.

## **2.3 SCOPE OF THE LITERATURE REVIEW**

The literature review covered the following aspects:

- epidemiology of cervical cancer
- etiology and prevention of cervical cancer
- pathology of cervical cancer
- cytological classification of precursor lesions
- cytological classification of cervical cancer
- early detection and diagnosis
- the role of medical practitioners in cervical screening programmes
- promoters of and barriers to cervical cancer screening programme implementation
- private medical practitioners' perceptions of cervical cancer screening
- the training needs of private medical practitioners in cervical screening
- paradigmatic perspective of research

### **2.3.1 Epidemiology of cervical cancer**

Haagedoorn, Oldhoff, Bender, Clarke and Sleijfer (1994:237) indicate that cervical cancer occurs mainly in women over the age of 30, with a peak incidence between the ages of 45 and 55. However, the incidence of cervical cancer has increased among younger women, and high grade lesions have also been diagnosed in women under the age of 20. The introduction of the new risk factors of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) which are common among younger people could probably explain this incidence. This has been observed / witnessed by the researcher while screening Pap smears received in a Cytology laboratory where she worked.

### 2.3.2 Etiology and prevention of cervical cancer

Deeley (1979:34) defines etiology as a study of the causes of disease. It is known that cervical cancer is related to sexually transmitted diseases (STDs). Therefore certain changes in sexual behaviours could prevent it. People develop cancer mainly through repeated or prolonged contact with one or more cancer-causing agents, called *carcinogens*. The primary risk factors for developing cervical cancer are intercourse at an early age, a history of multiple male sexual partners, intercourse with a male partner who has had multiple sexual partners, a history of STDs, and possibly cigarette smoking (Mqoqi et al 2003:18).

Mqoqi et al (2003:18) cites the strongest risk factor for developing cervical cancer as infection with certain strains of human Papilloma virus (HPV). HPV has been associated with precancerous and cancerous conditions and is a precursor of cervical cancer. HPV is a sexually transmitted agent that infects cells of the cervix. Women infected with HPV in their teenage years (13 to 19 years of age) may not present with symptoms for up to 20 years after infection. After contact with HPV, dysplastic cellular changes resulting in cancer development gradually occur. The HPV types that produce genital warts are different from those that cause cervical cancer. However, women who have a history of genital warts have almost twice the risk of an abnormal Pap smear as other women.

Haagedoorn et al (1994:237) state that "infections with particular HPV types seem to play an important role: as is probably the case with herpes genitalis infections". The presence of both HPV and herpes virus together is a good predictor of cervical cancer. Herpes virus type 2 has been reported to have oncogenic potential in animal studies. The antigens from the virus have been found in the cells of cervical cancer and the virus isolated from cells obtained from *cancer in situ* of the cervix.

Women with a weakened immune system, including women suffering from HIV and AIDS, have a higher than average risk of developing cervical lesions that can become cancerous. As a result, cervical cancer has become very common in women who are HIV positive. It is sometimes the disease that first suggests a diagnosis of AIDS. HIV can compound the effects of HPV, causing cervical changes to progress more rapidly into cervical cancer than they might otherwise.

However, Mqoqi et al (2003:19) reports that “although there have been slight increases in rates from those reported in 1995 in all population groups, these changes are not alarming and could not be attributed to HIV at this stage”.

Mqoqi et al (2003:18) indicates that “although only a small portion of women infected with HPV develop cervical cancer, recent studies have shown that women with high parity or who have used contraceptives long-term (more than five years) are more likely to develop cancer of the cervix than those who have used contraceptives less or with low parity”. As cervical cancer is related to STDs, certain changes in sexual behaviours could prevent its occurrence. Private medical practitioners have contact with patients and should develop awareness programmes to make patients aware of possible causative factors in cervical cancer.

### **2.3.3 Pathology of cervical cancer**

Perry and Burgess (2002:9) define cancer as “the name given to a collection of over two hundred diseases which share the ability to metastasize”. They state that cancers form when individual cells fail to die and reproduce unchecked and thus over-proliferate. The sequence of events in the development of cervical cancer starts with a precursor lesion. This lesion is cytologically diagnosed as atypical squamous cells of undetermined significance (ASCUS). ASCUS is followed by low grade squamous intraepithelial lesion (LG-SIL), High grade squamous intraepithelial lesion (HG-SIL) and then become invasive squamous cell carcinoma.

Cervical cancer is a slow growing tumour that has readily detectable and treatable precursor conditions thus potentially becomes one of the most preventable cancers (Fitch et al 1998:441). After the screening of smears made on microscopic glass slides, the lesions that have been diagnosed cytologically and confirmed, using histological techniques, are treated or excised completely. The patients will be monitored through follow-up Pap smears to ascertain complete excision and effectiveness of the treatment of the lesion.

Cervical carcinoma starts with an in situ stage that can be treated, and progresses to an invasive disease that is always fatal. Between normal cervical epithelium and invasive carcinoma, there is a “grey zone” made up of several intraepithelial lesions with varying degrees of abnormality of

their component cells. The abnormal cells on the surface of the cervix may be the first step in a series of slow changes that can lead to cancer years later. These abnormal cells constitute what is called precancerous lesions or precursors of cervical cancer.

### ***2.3.3.1 Cytological classification of precursor lesions***

The lesions may be classified as dysplasia, cervical intraepithelial neoplasia (CIN), or squamous intraepithelial lesion (SIL). The precursor lesions are more prevalent among younger women. The capability of these lesions to become a cancer able to infiltrate the surrounding normal tissue or to give distant metastasis depends on the severity of these abnormalities. The current classification system namely Bethesda 2001, refers to the abnormal changes in the cells on the surface of the cervix as squamous intraepithelial lesions (SILs). SILs are classified under two categories: low-grade SIL and high-grade SIL.

Low-grade SIL is a precancerous lesion that may also be called CIN I or mild dysplasia. It presents as mild early cellular changes on the cervix which may respond very well to treatment or even disappear on its own. The mild dysplastic changes are common among women between the ages of 25 and 35, but can appear even earlier in patients who are HIV positive and those who present with HPV and other sexually transmitted infections. If undetected and left untreated, low-grade SIL may progress into a more severe lesion, high-grade SIL.

High-grade SIL is also a precancerous lesion which presents with more severe cellular changes on the epithelial surface of the cervix. It may also be called moderate or severe dysplasia, CIN II or CIN III, or carcinoma in situ. High-grade SIL is more prevalent among women between the ages of 30 and 40, but can occur in younger women with HIV/AIDS infections.

### ***2.3.3.2 Cytological classification of cervical cancers***

Severe dysplasia has the potential to become aggressive and progress into cervical cancer. Haagedoorn et al (1994:239) state that cervical cancers are subdivided into micro-invasive and macro-invasive cancers. The macro-invasive cancers have a great potential to metastasise to other body organs. The risk of tumour spread in micro-invasive cancer is less than 1%

(Haagedoorn et al 1994:239). A high incidence of cervical cancer is reported in women over the age of 40.

### **2.3.4 Early detection and diagnosis of cervical cancer**

Deeley (1979:37) maintains that “not all doctors are convinced about the use of such detection methods and some are genuinely concerned that patients may develop an inordinate interest amounting to a phobia or fear about the disease as a result of such widespread advertisement”. Medical practitioners should increasingly be aware of cervical cancer as its incidence is continuously increasing. They need to develop an attitude of alertness to suspicious details. Medical practitioners must acquaint themselves with the early signs and symptoms of cervical cancer and also recognise the utilisation of the Pap smear as a method of cervical cancer detection (Deeley 1979:38). Medical practitioners should not be reluctant to screen patients who present with defined symptoms of cervical cancer and its precursors.

There is consensus on the barriers to cervical cancer screening among women. It is clear what barriers may lead to poor participation of women in a cervical cancer screening programme. In their study on the challenges to screening in the Eastern Cape Province, however, Smith et al (2003:32) found that little has been done to identify barriers within the health services. For the present study, it is important to determine the factors that facilitate and those that hinder private health care providers from sampling or recommending the procedure to high-risk groups. The value of screening for cervical cancer has been proved (Wellensiek et al 2002:377). In developed countries, screening has decreased the incidence and mortality rate by about 80%.

### **2.3.5 Role of medical practitioners in cervical screening programmes**

According to Perry and Burgess (2002:48-49), “there are two main sorts of relevant beliefs: about the professionals’ role (including what they are responsible for, and their competence to deal with issues), and about the patients and their role (such as their activity or passivity in the relationship). They have been trained that their function is to identify medical signs and symptoms and provide solutions to them.” As a result the general practitioner will treat what the patient is complaining about. They often do not worry about the underlying cause of the condition

as this may be time consuming. However, Deeley (1979:38) is of the opinion that the doctor has to develop an attitude of alertness to suspicious details together with knowledge of early signs and symptoms and screening methods. The health professionals' belief about their competence to deal with a particular issue may influence their response on it.

### **2.3.5.1 Identifying high risk patients**

Individual factors, such as perceptions of personal susceptibility to cervical cancer have an impact on patterns of screening attendance (Perry & Burgess 2002:13). They may motivate people to seek medical attention once they suspect that they are sick. Simons-Morton, Greene and Gottlieb (1995:269) define perceived susceptibility as the "extent to which the individual believes he or she is vulnerable to the health problem". If people believe they may get cervical cancer, they are likely to seek medical advice. This perception may prevail in individuals who engage in highrisk behaviours and probably have had several STDs in their lifetime. The value of the screening test is closely related to the chance that a woman has a detectable lesion. This depends on factors such as age and life-style.

The incidence of cervical cancer is a function of variables such as age at *menarche*, race, and number of children, among other things. However the incidence of precancerous lesions identified by the Pap test is highest among women in their reproductive age. All sexually active women are eligible to participate in a cervical cancer screening programme. It is thus suggested that screening should be recommended once a woman has become sexually active or has reached the age of eighteen. Women who engaged into sexual intercourse at an early age, have a history of multiple male sexual partners, engaged into sexual intercourse with a male partner who has had multiple sexual partners, have a history of STDs, and those who are cigarette smokers are at risk and should be screened (Mqoqi et al 2003:18).

Women who have a history of genital warts, herpes genitalis infection, and those with weakened immune systems have a higher than average risk of developing cervical lesions that can become cancerous. This includes women suffering from HIV and AIDS. These women are also eligible for cervical screening. Mqoqi et al (2003:18) point out that although "only a small portion of women infected with HPV develop cervical cancer, recent studies have shown that women with high

parity or who have used contraceptives long-term (more than five years) are more likely to develop cancer of the cervix than those who have used contraceptives less or with low parity". Haagedoorn et al (1994:239) identify the following symptoms of cervical cancer:

- inter-menstrual bleeding
- post-coital bleeding (spotting)
- haemorrhaging of more than 10 days' duration
- menopausal bleeding (usually endometrial cancer)
- unexplained abnormal (smelly) vaginal discharge
- micturation and/or defaecation disorders
- pain (usually late in the course of the disease)

#### ***2.3.5.2 Health promotion and education***

Since medical practitioners have contact with patients, they must develop awareness programmes on possible causative factors of cervical cancer for patients. Private medical practitioners could develop health promotion interventions which incorporate activities aimed at improving personal and public health. Nevertheless, Fitch et al (1998:442) point out that "despite the known value of cervical screening, a significant number of women do not avail themselves for the procedure." This may be because women do not perceive cervical cancer as a serious disease. Simons-Morton et al (1995:269) define perceived seriousness as "the relative severity of the health problem". Efforts should be made to increase public knowledge about cervical cancer and its causes. Health education could (and should) encourage individuals to make healthy choices about their life-styles.

It should be borne in mind that primary prevention of cervical cancer is not practical as the main factor thought to be associated with increased risk, namely sexual activity of both men and women, is not very amenable to regulation or control (WHO 1988:1). Therefore health education about screening is the actual primary prevention tool. In her study on cervical cancer and Pap smear screening in Botswana, McFarland (2003:172) found that "clients' inadequate or lack of knowledge about cervical cancer and its preventative measures was corroborated by the

providers". Fitch et al (1998:442) found that many women in Canada claimed not to have been screened because their physicians had not recommended the procedure. McFarland (2003:172) found the opposite in Botswana, where respondents reported that private doctors provided adequate information about cervical cancer and Pap smear testing.

### ***2.3.5.3 Pap smear performance***

The process of cervical screening is guided by the assumption that detection in the early asymptomatic stage allows treatment at a time when the course of the disease can be significantly altered. Screening is based on the principle that cervical cancer is preceded by a precancerous stage, when risk factors predisposing women are building momentum toward manifestation of the malignant stage of the disease. As a result, screening takes advantage of the early pathologic state of the disease during which high-risk women can be identified. This is not a diagnostic measure, but a way to direct the health care provider in assessment of the individual's chance of developing cervical cancer (Edelman & Mandle 2002:228).

According to Edelman and Mandle (2002:228), the second objective of screening is the reduction of the cost of treating the disease by avoiding the more vigorous intervention required during its later stage. The more advanced lesions may require histological techniques, radiation therapy, chemotherapy and others. Some procedures may require patient hospitalisation and thus increase the costs of treatment. By screening the patients, health care providers are attracted to a cost-conscious approach to health care. This also calls for a knowledge and understanding of the screening process and its applications. Cervical cancer screening is adaptable at all levels of health care and delivery systems due to its relatively low cost and flexibility.

The Pap smear, which involves scraping the cervix with a spatula and examining the removed cells under a microscope for signs of malignancy, is a highly reliable and accurate method used internationally. Women at risk can thus be screened using a Pap smear, which is a cytological technique. However, cervical cytology is only a fraction of the complete system required for cervical cancer control. It only identifies cases that need appropriate follow-up and treatment therefore it is a useless effort without adequately integrated diagnostic and treatment services essential for patients showing abnormal smears.

Fitch et al (1998:443) maintain that perceived social support both within the individual's environment and the physician's office contributes to a decision to have a regular Pap smear. Private medical practitioners should provide private areas to undress to make the first consultation a less intimidating experience. Patients should also be warned about the procedures to be taken during consultation. Perry and Burgess (2002:16) cite Suls and Wan (1989), who state that "information about procedures can be provided both about the events which the patient will undergo (procedural information), and also about how the patient will feel as a result of a particular stressful medical procedure (sensory information). Both types of information are important, but generally sensory information seems to be essential."

Screening should be limited to the women at high-risk of developing cancer and the frequency of screening reduced among women who have had at least one normal smear. The utilisation of vaginal smears as a screening tool on patients who do not show any symptoms has been recommended. This will make it possible for medical practitioners to detect early non-cancerous lesions in patients. Patients may seek medical attention after reading about the value of a Pap smear, might have a friend or a relative, who has developed cervical cancer, or may feel susceptible to the disease and, as a result, seek help. Patients may then approach a medical practitioner who is expected to advise them about available screening programmes. The medical practitioner should be in a position to teach the patient about cervical cancer. Effective communication between patient and medical practitioner may encourage further positive steps.

#### ***2.3.5.4 Interpretation of Pap smear results***

Simons-Morton et al (1995:269) define perceived benefits as "the anticipated value of the recommended course of action". People must believe that the action they are advised to take will actually benefit them. The reliability and validity of the test is critical. False negative screening results may result in individuals losing the opportunity to receive early treatment. It should therefore be emphasised that a negative screening result is not always a guarantee that pre-cancerous changes are absent (Perry & Burgess 2002:14). This action should be taken to prevent irreversible damage in case the patient is actually positive.

False positive results, however, may result in unnecessary frustrations among women. Perry and Burgess (2002:14) state that "at times there has been great concern about the emotional effects of screening. Firstly, unnecessary distress may be caused by telling the patient that a cancer might be present when in fact this turns out not to be the case (false positive)." The cervical cancer screening programme must be safe, cost-effective and accurate.

The diagnosis of cervical cancer is based on the abnormal cytology and visible abnormalities of the uterine portio (Haagedoorn et al 1994:239). Colposcopically directed biopsies of lesions may be obtained for histopathologic examination. Histopathology techniques are valuable tools in confirming the diagnosis made by cytology. The failure of histological biopsies to confirm the cytologically diagnosed premalignant lesions does not exclude a cancer, but actually calls for a cone biopsy. This is a surgical procedure done under general anaesthesia (Haagedoorn et al 1994:239.).

#### **2.3.5.5 Treatment**

Patients who show symptoms will often present to services and most commonly to the general practitioner in the first instance (Perry & Burgess 2002:14). Perry and Burgess (2002:14) indicate that the first contact with health professionals about a symptom that may indicate cancer is more likely to happen in the general practitioner's surgery. If the PHC approach is to be brought into the private health care sector, private general practitioners (as the patients' initial contacts) would then provide preventative health care. This is the stage when the medical practitioner should clear any perceived barriers during consultation with the patient. Depending on the type of the lesion and the extent of damage caused by the lesion, and taking the patient's needs into consideration, the following treatments may be offered (Haagedoorn et al 1994:243):

- portio-saving procedures, such as excision by diathermic loop
- tissue destructive methods, such as cryotherapy, laser therapy or electro coagulation, and cone biopsy of micro-invasive cervical cancer
- treatment with curative intent is usually extirpation of the uterus
- post-operative radiation therapy

- chemotherapy

### **2.3.5.6 Patient referral**

A functional screening programme would be the most successful tool for cancer prevention as it can reduce the incidence and deaths by as much as 90%. This should be accompanied by high screening quality and complete coverage achieved by increasing accessibility of facilities and resources to needy communities.

### **2.3.6 Promoters of and barriers to cervical cancer screening programme implementation**

Cervical cytology screening is a public health programme aimed at early detection of cervical cancer in its undeveloped a-symptomatic curable stage. Perry and Burgess (2002:13) assert that “screening programs rely on the cancer being common, associated with high-risk groups and having a pre-cancerous condition that is both identifiable and treatable”. Consequently, an effective screening programme should reduce the morbidity and mortality due to the disease. The health belief model (HBM) is often used as a framework for conducting needs assessment in preventative health behaviour and compliance studies (Simons-Morton et al 1995:270).

Several factors can affect the efficiency of screening. One of these, according to Perry and Burgess (2002:13), is overrepresentation of certain social groups in attendance figures. In her study in Botswana, McFarland (2003:172) found that information about cervical screening was mainly accessible to women of a high socio-economic status. The cost of the screening programme may also have an impact on patients’ attendance and may be a perceived barrier to cervical screening. Simons-Morton et al (1995:269) define a perceived barrier as one that includes cost involved in taking a particular action. People who perceive cervical screening to be costly, a waste of time, time consuming, difficult, or painful are unlikely to participate in the programme.

Fitch et al (1998:443) cite fear of the test, fear of the test results, and embarrassment as some of the reasons why women do not participate in screening programmes. Fitch et al (1998:442) also classify these factors as patient-specific, provider-specific, and health-care system-specific.

According to Fitch et al (1998:442), women's knowledge about the Pap smear and the purpose of the test, understanding of the benefits of both the test and early detection, as well as access to information by means of education are key patient variables; how frequently women saw a family physician or an obstetrician/gynaecologist, and whether the physician recommended a Pap smear are key provider variables, and the insurance coverage for Pap smear is a health system variable.

Fitch et al (1998:443) list the following as specific potential barriers:

- not wanting a male health care provider to do the examination
- finding the pelvic examination unpleasant
- not wanting to go looking for trouble
- the time it takes to go to see a health care provider

Perry and Burgess (2002:15) maintain that the emotional distress experienced by patients during consultation can influence their ability to attend to what is happening or being said, make sense of information and weigh up the choices offered. Watkins et al (2002:476) found that among rural Mexican women, anxiety over physical privacy was a major barrier to undergoing a Pap smear. They also determined the level of participation by measuring *pena*, which is a Spanish word that means embarrassment and anxiety about showing one's private parts, and state that this feeling can be lessened if a female health care provider conducts the Pap smear.

Limited office hours, office receptionist denying women access, office practice being very busy, waiting times being very long, and the actual appointment time with the physician being very short limit women's access, interaction and actual conversation with the private health care provider in addition, it is clear that the communication between a woman and her physician is an important aspect of care, whether it is the interaction in completing a history or during a procedure (Fitch et al 1998:448).

### **2.3.7 Private medical practitioners' attitudes towards cervical cancer screening**

How health care professionals behave determines their relationship with patients. Their behaviour is predicted by their beliefs and emotional state (Perry & Burgess 2002:48). Health professionals' belief about their competence to deal with a particular issue may influence their response to it (Perry & Burgess 2002:49).

It is not easy to think about any cancer or life-threatening disease unemotionally. Deeley (1979:16) points out that "the very thought of malignant disease causes concern to us all". Hence medical practitioners will also fear the subject of cervical cancer to some extent. Although fear is inherent in human nature, it is also a response to the unknown which differs from person to person and therefore from medical practitioner to medical practitioner (Deeley 1979:16). How medical practitioners perceive the seriousness of cervical cancer will determine their approach to the sufferer. Knowing someone, a relative or a friend who suffered from cervical cancer may have an impact on the medical practitioner's attitude. Their attitude may be affected by the success of the treatment received by patients while unsuccessful treatment may moderate their attitude to patient care.

Deeley (1979:12) argues that attitudes are composed of two parts. The basic human attitudes are the fundamental reactions that are composed of basic factors such as fear and anxiety. The attitudes may also be acquired through experience, by being told some things and reading. The medical practitioner's attitude to a disease is also made up of two parts: a basic human attitude and the attitude developed through their training (Deeley 1979:14). Newly qualified medical practitioners may be greatly influenced by basic factors. As they grow and learn more, their experience will influence their actions and decisions.

### **2.3.8 Training needs of private medical practitioners on cervical screening programme**

After training and qualifying, medical practitioners need to keep on learning and abreast of developments. Deeley (1979:17) states that "the doctor will be able to fit himself into this scale on almost any medical problem and few practitioners will be satisfied with their medical knowledge". The medical practitioner adds his experience to his formal training. This experience may be

derived from observation, careful recording, analysis and trial and error resulting in an individual approach and a personal medical philosophy (Deeley 1979:18).

Basic facts about disease, recognition of early symptoms, possible methods of early diagnosis, the best treatment regimes to be used and the realisation that something can be done, should form the basis of training received by student medical practitioners (Deeley 1979:20). Medical practitioners should keep themselves informed on current medical issues and developments through journals, reviews, annotations, and text books. Continuing education should always be accessible to medical practitioners. Student medical practitioners are entitled to sufficient education during their undergraduate years as well as adequate postgraduate education in oncology (Deeley 1979:20).

## **2.4 RESEARCH PARADIGM**

Bowling (1997:6) holds that the aim of health services research is to evaluate health services in relation to their appropriateness, effectiveness, cost, and acceptability at the primary and secondary levels of care. Bowling (1997:7) goes on to say that health services research is mainly concerned with evaluating structure, process and outcome. Anspaugh, Dignan and Anspaugh (2000:89) state that in developing health promotion programmes, evaluation may focus on processes, impact and/or outcomes.

In the present study, a formative evaluation would be ideal as the cervical screening programme is active and the findings could be used for a tailor-made screening programme that would target private medical practitioners. To evaluate the health services, data should be collected about the structure, inputs, output, process and outcomes of the service. The researcher did not use a theoretical framework or model during data collection. The health services evaluation model was only used in discussing the research findings to structure and reflect the findings.

### **2.4.1 Structure and inputs**

Structure refers to the organisational framework for the activities: the type of buildings, availability of equipment, distribution of staff considering their mix in relation to their level of training and

skills, and the availability of facilities, services, and equipment (Bowling 1997:10).

### **2.4.2 Processes and outputs**

According to Anspaugh et al (2000:89), process refers to how the service is organised, delivered and used, or the actual operation of the programme. It includes accessibility, the way in which personnel and activities interact, and interaction between personnel and patients. To evaluate process, the data collected includes outputs (the activities that occur through the use of the resource in the system). The activities can be viewed in relation to how much equipment, number and type of patient-professional contacts, length of consultation(s), waiting lists and waiting times.

Bowling (1997:11) cites Donabedian (1980) in whose view accessibility is also a process indicator. Accessibility deals with the level of use by different population groups as well as the adequacy and appropriateness of services provided. Quality of relationships, communication between professional and professional, and professional and patient (provision of information to patients and to medical practitioners about their patients' laboratory results), plans and procedures followed and documentation are also involved in process analysis.

### **2.4.3 Outcome**

Health services outcomes refer to the impact of the health services on the health of individual patients in relation to their health gain as well as the patients' evaluation of their health care (Bowling 1997:12). Anspaugh et al (2000:89) describe outcomes as the long-term effects of an intervention on a patient's health. Hence a positive outcome is one aimed at maintaining a patient's stable health condition. Bowling (1997:13) lists degrees of well-being, ability, comfort, and satisfaction as positive outcomes. Lohr (1988) (cited in Bowling 1997:12) defines outcome in relation to death, disease, disability, discomfort and dissatisfaction.

Health interventions must be appropriate in order to have a positive impact on patients. Bowling (1997:11) (cited in Hopkins 1993) states that "appropriateness of care refers to the selection, on the basis of evidence, of interventions of demonstrable effectiveness that are more likely to lead

to the outcome desired by the individual patient'. Resources and the patient's individuality should be taken into consideration. Interventions should be comprehensive and focus on health promotion and prevention activities. A holistic approach will lead to activities being effective thus intended goals being achieved. Health care costs should correlate with the benefits from the interventions.

## **2.5 CONCLUSION**

This chapter discussed the literature review and the research paradigm. Chapter 3 covers the research methodology.