THE QUALITY OF NURSING CARE REGARDING PERSONAL HYGIENE OF PATIENTS ADMITTED TO A SELECTED HOSPITAL IN THE KAVANGO REGION

By

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DECLARATION

Student number: 9208607

I declare that:

"THE QUALITY OF NURSING CARE REGARDING PERSONAL HYGIENE OF PATIENTS ADMITTED TO A SELECTED HOSPITAL IN THE KAVANGO REGION"

is my own work and that all resources that I have used have been indicated and acknowledged by means of complete references.

SIGNATURE DATE

M MUYEU (Mrs)

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SUMMARY

The aim of this study was to determine the quality of nursing care regarding personal hygiene of patients admitted to a hospital in the Kavango Region of Namibia.

The study was prompted by repeated media reports over the radio. Commentators and listeners expressed concern over the seemingly lack of adequate hygienic measures, specifically with regard to patient care.

To objectively quantify and describe the extent of this problem, a single objective was stated, namely to measure the quality of nursing care with regard to patient hygiene. A descriptive survey design was chosen to explore and describe the problem. A check-list was developed to observe thirty patients (the total population) over a period of one week.

The results indicated that certain aspects (parts) of hygienic care needed improvement. These aspects (parts) were:

- the care of male patients' beards;
- perineal care; and
- mouth care.

Other aspects of care were indirectly negatively influenced due to incomplete record-keeping.

On completion of the study recommendations were made with regard to:

- in-service education;
- management; and
- research.

DEDICATION

This work is dedicated to my husband Olavi, who inspired me to undertake this study. A special appreciation to my children, Sakaria and Thusnelda for their encouragement, moral support and good understanding, for allowing me to study without any disturbance.

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CHAPTER ONE

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Hygiene is the science of health and its maintenance. Personal hygiene is the self-care by which people maintain health. Hygiene is a highly personal matter determined by individual values and practices. It is influenced by culture, social, familial and individual factors, as well as by the person's knowledge of health and hygiene and perceptions of personal comfort and needs.

When people are ill, hygienic practices frequently become secondary to other functions, such as breathing, which in health are taken for granted. One sign that a formerly ill or depressed patient is feeling better is an interest in shaving, hair care or make-up. Hygiene involves care of the skin, hair, nails, oral and nasal cavities, eyes, ears and perineal and genital areas.

1.2 NURSING CARE

Quality nursing care and quality improvement in the nursing profession are not new issues. These can already be found in the writings of Florence Nightingale (Bastford & Slevin, 1995:26). The Americans have replaced assurance with improvement, as quality can never be assured but just improved. Therefore quality nursing is an essential element of health care. It is believed that quality services improve the reputation of a hospital. If the nursing personnel believes that quality

service is a worthy goal, then ways means and will be found to establish and maintain high standards of patient care. The society wants legally and ethically based quality nursing care.

The purpose of hygiene is that it (in this study quality of nursing is equated with adequate hygienic conditions or care):

Promotes cleanliness, e.g. removes transient micro-organisms and body secretions and excretions.

Provides comfort and relaxation, refreshes the client and relaxes tired, tense muscles.

Conditions the skin for example a warm bath causes peripheral vasodilatation and thus increases the blood circulation to the skin.

People who are very ill often are unable or lack the energy to bath or brush their teeth, for example, they require assistance to carry out many hygienic activities. It is important for nurses to know exactly how much a patient can safely do and how much assistance is required. Patients may require care after urinating or defecating, after vomiting and whenever they become soiled, e.g. from wounds or profuse perspiration. Nurses must keep the hygienic needs of patients in mind and assist whenever indicated.

Cultural aspects of hygiene in the Kavango

For the people of the Kavango to air their concern on hygienic matters indicated a cultural acclimation. For centuries personal hygiene was not regarded as an important aspect of daily living. The ancient people in Kavango could stay for months without washing. When conducting the study, the researcher had to keep this aspect in mind as a possible variable in the delivery of hygienic care. This aspect of "culture" will be integrated in chapter two during the review of the relevant literature.

1.3 PROBLEM STATEMENT

The decision to determine the quality of nursing care concerning personal hygiene of patients is based on the following reasons:

The patients and the community of the region demand better nursing care. They complained that patients are not bathed properly, mouth care is neglected, nails and hair are not cared for, the environment is not clean and clean linen is not always available. This forced them to voice their concerns on an open radio programme.

These comments were heard during the period 1997 - 1999 over the radio (personal knowledge of the researcher, 1997 - 1999).

Bennett & Brown (1996:794) say that the need for quality assurance has risen because of the following:

- The raising expectations of consumers.
- Increasing pressure from international governments to demonstrate that the allocation of funds produces satisfactory results in terms of patient care.

1.4 RESEARCH QUESTION

From the above the following question could be asked: What is the current quality of basic nursing care specifically with regard to personal hygiene of patients in hospitals in the Kavango region?

1.5 PURPOSE OF THE STUDY

The purpose of this study is to determine the quality of nursing care regarding personal hygiene of patients admitted to a hospital in the Kavango region.

1.6 STUDY OBJECTIVE

The objective of this study was:

To measure the quality of nursing care with regard to certain aspects concerning personal hygiene of patients in a hospital in the Kavango region.

In this study the objectives were investigated by means of a survey to obtain descriptive and exploratory information (see Chapter 3).

1.7 METHODOLOGY

A descriptive exploratory designs by means of a survey was utilized (see chapter 3)

1.8 OPERATIONAL DEFINITIONS

Quality Is defined as a degree or level of excellence (Oxford Dictionary, 1990:652).

Nursing Standard The desired quantity, quality or level of performance that is established as a criterion against which workers' performance will be measured (Gillies, 1994:515).

Nursing Practice The performance or completion of any act in the observation, care and counsel of the ill, injured or infirmed, or in the maintenance of health or prevention of illness of others, or in the supervision of teaching of other personnel, or in the administration of medication and treatment as prescribed by doctors or dentists. It requires substantial specialised judgement and skills based on knowledge and application of the principles of biological, physical and social science (Bailliere's Nurses Dictionary, 1990).

Personal Hygiene Principle of maintaining health. It can also be defined as the self care by which people maintain health (Oxford Dictionary, 1990:579).

Patient Is a person under medical treatment, this can also be a person under nursing care (Researcher's definition).

Hospital Is an institution for care of the sick (Oxford Dictionary, 1990:570).

Criterium A standard of judgement (Oxford Dictionary, 1990:191).

Indication Something that indicates or points to something (Oxford Dictionary, 1990:412).

1.9 ARRANGEMENT OF THE CHAPTERS

CHAPTER ONE

Orientation to the study.

CHAPTER TWO

Literature review.

CHAPTER 3

Methodology.

CHAPTER 4

Data analysis and interpretation.

CHAPTER 5

Report on the findings, conclusions, limitations, implication of the findings and recommendations.

1.10 SUMMARY

In chapter one an overview is provided on the formulation of the problem statement, namely the concern of the public with regard to hygienic nursing care to patients in hospitals in the Kavango region.

From the problem formulation the research question that was asked was: *What is the current quality of basic nursing care specifically with regard to personal hygiene in a hospital in the Kavango region.*

The objective of the study is therefore *to measure the quality of nursing care with regard to*

certain aspects (parts) of hygiene in a hospital in the Kavango region.

In the next chapter, chapter two, aspects and concepts around hygiene will be clarified and highlighted.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is a term used to identify and search for written information on a topic, so that a comprehensive picture of the state of knowledge on the topic can be obtained. Polit and Hungler (1995:69) write that the term is used to designate a written summary of the state of the art on a research problem. However, a library search can also be described as a way of finding methods, ideas on similar studies, whereby comparisons can be made with the proposed study.

For the nursing profession to be dynamic, it needs to gain more knowledge and insight on the quality of nursing care. Knowledge about personal hygiene of patients admitted to hospitals will also contribute, if documented, to the improvement of the quality of nursing care provided to the patients.

Miller (1992:326) says that a literature review in the context of therapy may include anything that will be of probable value in helping the client and care giver to understand, to come to terms or to therapeutically reshaping a situation.

In this study, the literature review was structured around the following:

- The state of the art of the research problem (Polit & Hungler, 1995:69). Culture as a determinant or hygienic practices.
- Clarifications/demarcations on the concept of hygiene as part of quality care.
- The conceptual framework of the study.

2.2 THE STATE OF THE ART OF THE RESEARCH PROBLEM

In this study the state of the art of the research problem focussed on previous studies being done in this field.

Studies that were scrutinized were those that could be classified as:

- National (Namibian) studies; and
- those that could be classified as International studies.

2.2.1 National studies

Few studies have been conducted in Namibia with regard to hygiene.

In one of the earliest studies on the quality of nursing care in Namibia (Van Dyk, Small &

Ackermann, 1994:4) evaluated mainly the nursing care of patients with regard to their intravenous infusions. They did, however, mention that male patients were very seldom shaved.

In a later study by Van Dyk and Small (1997:21) it was found that oral care given to unconscious patients was unsatisfactory. It also revealed that these patients had sores on their lips which were also cracked. There was also a high incidence of halitosis and dirty buccal cavities.

These two studies did not concentrate on hygiene as a much broader concept, but only on mouth care and general appearance. For the purpose of this research project, a broader approach which is more holistic in nature was implemented.

2.2.2 International studies

When scrutinizing international studies, the emphasis was on African studies. Namibia being part of Africa, should first and foremost look for similarities. Many African cultures show some similarities when it comes to traditional practices.

Information on hygiene related studies were found in the following African countries:

- Swaziland; and
- Zimbabwe.

Swaziland

The study in Swaziland was conducted by the World Health Organization (WHO) in 1995. It was conducted to determine the factors influencing the performances of nurses in the delivery of basic nursing and patient care in hospitals.

In the report compiled, the following comments seem appropriate to link up with this research project:

- Management practices seemed to have significant influence on the performance of nurses.
- If there were guidelines in place, not all the nurses were orientated in the utilization thereof.
- Supervision done at public hospitals was considered to be haphazard because there were no work plans and supervisory checklists.

It was also recommended that training should include emphasis on hygiene (WHO, 1995:2-4).

From the abovementioned recommendation in the Swaziland study it seemed that the quality of hygienic care was not satisfactory.

Zimbabwe

The findings on the study done in Zimbabwe (1995) regarding factors affecting the quality of nursing care by Mugweni , L., Ali, L, Mavhare, H. & Mpofu, Y.E.K. et al (1995:4) revealed that few patients received relevant information on personal hygiene. In this study it was found that relatives and patients expressed concern that very ill patients were not bathed, were left soiled and their positions were not changed as required. The complaints in this study are similar to the study to be conducted. The study further showed that the quality of nursing care was inadequate.

The problems experienced in Zimbabwe are similar to those in Kavango, whereby complaints were received from clients and their relatives through written and electronic media. In response to the outcry from the community, the researcher decided to evaluate the magnitude of the problem.

In these studies it become clear that some African countries do experience problems with the provision of satisfactory hygienic care.

What was not mentioned in these studies was the influence of cultural beliefs and practices.

In the Kavango region in Namibia certain cultural practices may still be in contradiction to modern hygienic principles.

2.3 CULTURE AS A DETERMINANT OF HYGIENIC PRACTICES

As has been mentioned in chapter one, for centuries personal hygiene was not regarded as an important aspect of daily living. The ancient people in the Kavango could stay for months without washing.

People were wearing a skin cloth that could not be washed. It could, however, be softened by oils from certain plants. Soap was not known and similar agents were also not used.

According to Gordon, Larson & McGurk (1981:48-50) the customary Kavango woman's dress consists of front and rear aprons of cured cow's stomach, as well as duiker or goat skin, held in place by belts or cured ox hide.

The women wear various coiffures, all with the hair very long and frequently formed into long thin braids (see Figure 2.1).

These braids were extended by intertwining fibres from a tree, called mugoro, with the real hair. White porcelain beads were also threaded into the hair. The whole coiffure was then smeared with rukura. Rukura is powdered wood which causes a smooth reddish colour on the skin and braids. A woman without these traditional braids and coiffures was regarded as poor and of a lower social class.

Figure 2.1 Kavango traditional hair style

People also had to walk bare feet. Shoes were not known by most of the people. Some of the wealthy people were able to make shoes from cattle skins. Wearing of shoes was not regarded as necessary for daily living.

Teeth were cleaned by means of chewing sticks. These chewing sticks were taken from a plant called sihorowa in Rukwangali language. The sticks were softened by chewing the Slender cuttings from the roots or stem. One end of the stick is chewed until it becomes frayed like a

paintbrush. After that, these were used to brush and clean the teeth and to massage their gums. Chewing of these sticks stimulates salivation and keeps the oral mucosa hydrated (see Annex E: "A stick a day keeps the dentist away" by Robin Sandler).

The practice of daily washing/bathing was also connected to the status of people and their wealth. One should not take a bath because it was believed that this exercise will wash out all the wealth and this will cause poverty. The only way, where one has to get in touch with water was during fishing in the Kavango River.

Rural elderly people believe that frequent bathing is injurious to health (Ellis & Nowlis, 1985:414). This category does not regard personal hygiene as a priority as it was not a practice during their childhood. Although no statistics are available, people in Kavango have become more hygiene conscious over the last few years. The abovementioned reasons for low priority for daily hygiene are some factors to be considered whenever full wash or bed-wash is to be performed to patients.

The missionaries (Catholics and the Lutherans) contributed to changes of this culture. This was a very slow process. At first, the daily wash/bathing was said to be for white people and their followers. However, with time, people started to understand the benefit of being clean and started to practice it. (Personal knowledge of researcher)

Because people started to practice the new ideas on hygiene, their expectations increased. When

the nursing care did not live up to these expectations, they made their misgivings known, as was also discussed in chapter one.

This confirms with the writings of Booyens and Roos (1994:20). They stated that the community of today is more informed about health matters than their predecessors. Patients evaluate their nursing care as satisfactory when they were correctly diagnosed, were treated without delay, treatment proved effective and they are fit for discharge within a short period of time (Booyens & Roos, 1994:20).

Even through the community may have new expectations, people still do not always wear shoes or they may still clean their teeth with chewing sticks.

Thus, when patients' hygiene with regard to their feet is evaluated, it may be possible that it appears unhygienic or cracked. Then findings may bias results.

It is thus necessary to clarify or set demarcations to what exactly is meant by hygiene in nursing care.

2.4 CLARIFICATIONS AND DEMARCATIONS ON THE CONCEPT OF HYGIENE AS PART OF QUALITY NURSING CARE

Hygiene and quality nursing care could mean different things to different people. It is therefore

necessary to demarcate what is meant by these two concepts.

2.4.1 Quality nursing care

Muller (1996:225) refers to quality as the characteristics of excellence. The patients, management and the nursing practitioners can perceive this differently. The patient expects the best nursing care possible and thus will generally focus on basic aspects such as comfort, pain relief and nursing actions that will improve his/her condition. Management on the other hand focuses on the clinical output as well as the cost involved (Muller, 1996:224). The nursing practitioner regards professional knowledge and skills as extremely important and his/her expectations are influenced by previous education, norms and values, which influence the principles of right and wrong (Muller, 1996:225).

Quality care has been a need and aspiration of nurses from time immemorial. Despite all the changes and innovations within the health milieu, the most important role and function of nurses today is still to render quality patient care. As patients have a right to be treated and cared for with dignity, the care should be of such a quality to ensure knowledgeable, competent, safe and ethically based care (Muller, 1996:225).

Perhaps the most weight bearing determinant of quality nursing care is patient satisfaction.

To ensure the obtainment of satisfaction by patients certain requirements are needed, namely:

- structure standards;
- process standards; and
- outcome standards.

Structural elements will include the physical setting, staff allocation, equipment, goal and philosophy. The process elements are those nursing actions, which have to be implemented so as to reach the outcome elements as changes in the patient's health care (Gillies, 1994:517). Prior judgement about the environment in which the nursing activities will be carried out, needs to be done in advance, before the patient is admitted. If an error of judgement, an accident or other problems in patient care arises, the society and the observers of the system, who become unhappy with the situation, will seek to redress it through litigation to correct the problem.

In this study the focus is on the obtainment of outcome criteria that have been developed for certain aspects or parts of hygiene. Outcome criteria reflects the results of the Nursing Care being rendered.

Despite many references to assessment of patient needs, and the quality of service rendered, there is no evidence of total commitment by all nurses to assist patients to meet their basic needs. Outcome criteria might be a method to determine to a certain extent the commitment of nurses.

Professional performance is measured not only by the task performed, but also by the results achieved. In order to evaluate the quality improvement in nursing care certain steps need be taken as described by Muller (1996:228):

- Audit
- Observations by means of a checklist
- Client evaluations
- Peer group evaluations

2.4.1.1 Audit

Muller (1996:231) points out that standards must be written in terms of actions that can be seen, measured and judged. Clear, concise, specific statements, worded in terms of the actions and behaviour required is a pre-requisite for expected outcomes. Auditing is the instrument to monitor quality, it measures the process and compares it to the set standards of the nursing services.

Two types of auditing are used in patient care. A concurrent audit is used while the patient is still in the hospital. Patient care given is in this process evaluated and observed as it is given. However, a retrospective audit is done after the patient has been discharged. In this case, the patient's file and health records are the source of information concerning the care given while under treatment/care. It is a common sense in nursing that if activities are not recorded, it means

that it is not done. Therefore, completeness of recording of the care given, will determine the outcome results as well as the quality of nursing care given to the patient (Gillies, 1992:524).

2.4.1.2 Observations by means of a checklist

(a) Observations

Scientific observation involves the systematic selection, observation, and recording of behaviours and settings relevant to a problem under investigation. It can vary in structure from highly unstructured to highly structured. (Polit & Hungler, 1991:319)

There are certain phenomena amenable to observation. They are:

Characteristics and conditions of individuals

A broad variety of information about people's attributes and states can be gathered by direct observation. Included here are physiological symptoms that are amenable to observation.

To illustrate this class of observable phenomena, the following could be used as dependent or independent variables in a nursing research investigation: the sleep or wake state of patients, the presence of edema in congestive heart failure, and turgor of the skin in dehydration. (Polit & Hungler, 1991:320)

In this study characteristics and conditions of individuals were observed. (See also Chapter 3 and Annexure C).

Verbal communication behaviours

One of the most commonly observed types of human behaviour is linguistic behavior. The content and structure of people's conversation are readily observable, easy to record, and thus, are an obvious source of data.

Nonverbal communication behaviours

People communicate their fears, wants, and emotions in many ways other than just with words. For nursing researchers, nonverbal communication represents an extremely fruitful area for research because nurses are often called on to be sensitive to nonverbal cues.

Activities

Many actions are amenable to observation and constitute valuable data for nursing researchers. Activities that serve as an index of health status or physical and emotional functioning are particularly important. (Polit & Hungler 1991:321)

Skill attainment and performance

Nurses and nurse educators are constantly called on to develop skills among clients and students. The attainment of these skills is often manifested behaviourally, and in such cases, an observational assessment is appropriate. For example, a nurse researcher might want to observe the following kinds of behaviours: the ability of nursing students to properly insert a urinary catheter, the ability of stroke patients to scan a food tray if homonymous hemianopia is present, the ability of diabetics to test their urine for sugar and acetone, or the ability of a newborn to exhibit sucking behaviour when positioned for breast-feeding.

Environmental characteristics

An individual's surroundings may have a profound effect on his or her behaviour and, therefore, a number of studies have explored the relationship between certain observable attributes of the environment on the one hand and human beliefs, actions, and needs on the other. (Polit & Hungler 1991:321)

(b) Units of observations

There are two basic approaches, which are perhaps best considered as the end points of a continuum. The molar approach entails observing large units of behaviour and treating then as a whole. For example, psychiatric nurse researchers might engage in a study of patient mood swings. An entire constellation of verbal and nonverbal behaviours might be construed as

signalling aggressive behaviours, and another set might constitute passive behaviours. At the other extreme, the molecular approach uses small and highly specific behaviours as the unit of observation. Each movement, action, gesture, or phrase is treated as a separate entity, or perhaps broken down into even smaller units. (Polit & Hungler 1991:321)

In this study, a more molecular approach was utilized. (See Annexutre C)

(c) Observation methods

Observation could be unstructured or structured. Field research usually involves the collection of unstructured or loosely structured observational data. The aim of field research is typically to understand the behaviors and experiences of people as they actually occur in naturalistic setting. (Polit & Hungler, 1991: 325 – 326)

Structured observational methods differ from unstructured techniques in the specificity of behaviours of events selected for observation, in the advanced preparation of record-keeping forms, and in the kinds of activities in which the observer engages. The observer utilizing a structured observational procedure may still have ample room for making inferences and exercising judgement but is restrained with regard to the kinds of phenomena that will be watched and recorded.

Observation by means of a checklist is used to check whether certain activities have been

performed according to the expected standard. The criteria used are just to tick off on the instrument and the judgements "Yes/No" are used for evaluation. The rationale behind the checklist is to determine whether management criteria for specified problems have been achieved (Muller, 1996:45). In this study specific outcome criteria has been used.

2.4.1.3 Client evaluation

According to Muller (1996:233) this method makes use of clients to respond or to give feedback by means of completed questionnaire on discharge. The clients express their views by responding to questions asked on the instrument. There are some strong points attached to the client evaluation method. For example, to identify areas where in-service education is needed, to supply data for management and decision-making. It also enables the managers to write nursing care standards.

The population in this study do not all have the necessary literary skills.

2.4.1.4 Peer group evaluation

This is a process whereby a group of nurses evaluate the quality of another nurse's performance. It provides feedback for information sharing so that consistency of performance can be measured against the standards. Peer review increases nurse's accountability for professional decision-making and effective nursing care (Gillies, 1994:528).

Whatever method of evaluation is used, the aim is to identify the training needs and to maintain the standard of nursing care. This will protect the good name of the nursing profession, and also protects the public from mal-practices of the nursing personnel.

According to Henderson (In Bastford & Slevin, 1995:212) nursing is primarily complementing the patient by supplying what he needs to perform his activities. These activities comprise a normal day for the patient. In viewing Henderson's (In Bastford & Slevin, 1995:212) fourteen components of the basic human needs, it is equally important to realise that some of the components are in line with the information required at this stage. The components support the idea of supplying what the patient is demanding for to be able to have a normal day.

It is evident that all the components are equally important for each human being to survive and are facilitating the basic needs. These components are complement and supplement each other. But for this study, the author is more concerned about the eighth component, which deals with the cleanliness of the patient. The core concept that is most reflective, also of Nightingale's physical environment theory, includes cleanliness. The emphasis here is the exclusion of medical treatment and to apply nursing practice. In this process, the patient is put in best position for the nature to act (Bastford & Slevin, 1995:26).

The nursing actions and nursing standards are required to respond to the patient's needs for assistance. For example, the wholly compensatory nursing system is represented by a situation in which a patient has no active role in the performance of self-care. At this stage the patient is

either partly or totally incapacitated to perform the activities of daily living. The nurse must ensure that hygienic needs are met. Effort, performance and reward are prerequisite for any nursing action in an attempts to achieve the higher quality of nursing care.

Despite these differences from other models such as Henderson's theory of basic needs and Muller's (1996) quality assurance process, all of these authors have one aim in common. This is the improvement of the quality of nursing care due to patients.

There is also a tendency of newly qualified nurses to apply for positions in cities. This may lead to a shortage of nursing staff, contributing to the problem

This may cause a decline in the quality of care. The study was initiated for this reason.
The literature study was also undertaken to see what is written about activities of daily living when it comes to personal hygiene of patients admitted to the hospital, and what the nurse should do to patients who are unable to take care of their own personal hygiene.

2.4.2 Personal hygiene

In the health care setting it was a nurse that demonstrated how improvement in hygiene could lead to a decrease in mortality.

During the Crimean War, the death rates at the base hospital at Scutari was 42 percent. Within two months Florence Nightingale reduced this rate to two (2) percent (Dolan, Fitzpatrick & Herman, 1983:157-161). The results from Florence Nightingale's interventions have caused a paradigm shift in nursing care (George, 1995:32). All of this was achieved by means of improvement in hygienic and nutritional measures.

It is, however, true that hygienic measures by the nurse may be complicated by certain factors like nurse : patient ratio, philosophical underpinnings in what the nurse understand as "caring", as well as a lack of understanding of the importance of proper hygiene.

- **Nurse: patient ratio**

If a ward is understaffed, the first aspect of care that is compromised is usually hygiene. The maintenance of patient's vital functions like an open airway, breathing and circulation take preference. Many times the poor nurse : patient ratio could be attributed to improper management and supervision. Poor nurse-patient relationships, poor communication among nursing staff, staff shortage have been cited by authors such Potter & Perry (1997) as leading to inadequate care.

- **Caring as practised by nurses**

Nursing is regarded as a profession distinguished by it's philosophy of care (Botes, 1999:64).

If nursing care is implemented adequately, many queries can be avoided and the psycho-social needs of the patient are placed in perspective. Therefore, there is a need for greater understanding and treatment of the patient's needs.

Muller (1994:22) says that everyone should adopt a new philosophy which is, "doing things the first time in a correct way which should become a matter of routine". To understand the importance of quality care regarding personal hygiene of patients admitted to a hospital, one needs to look at personal hygiene as a core concept of daily living.

The nurse has to be committed and has to see hygiene as a patient's right. It therefore also involves an ethics of justice.

- **The importance of proper hygienic measures**

It is possible to identify physiological as well as comfort benefits from good hygienic care.

A general physiological summary would be that bathing produces a sense of well-being as it cleans the skin, stimulates circulation, dilates superficial arterioles and brings more blood and nourishment to the skin. In addition rubbing is particularly effective as it is facilitating venous blood flow (Potter & Perry, 1990:1016-1017).

Stimulating venous blood flow is especially important when:

- a patient is unable to turn himself in bed; and
- a patient is paralysed.

For a nurse, bathing offers an opportunity for her to assess the patient for skin rashes, dryness, the presence of oedema as well as for the assessment of social and psychological needs. This also enhances the comfort level of the patient. From the perspective of a patient, comfort means to receive quality care in an ordered, planned manner (Morse, 1999:5).

The nurse can identify the comfort level of the patient through communication and observation.

Through the process of bed bath, the nurse is able to communicate to the patient, resulting in a mutual understanding between the nurse and the patient.

Ellis and Nowlis (1995:411), who defined hygiene as those practices that bring about personal cleanliness, comfort and a feeling of well-being, say that the way a nurse manages the patient's hygiene communicates a great deal. If a nurse administers skilful and knowledgeable hygiene, the patient will have more confidence in her ability to perform other tasks. Helping the patient to maintain hygiene tells him that the nurse cares about his comfort. In a hospital setting, being clean and neat conveys the message to the patient and his family that he is still a worthy person who is expected to be back in the community after recovery. However, the manner in which care is

rendered needs to be adjusted, to meet the individual needs of the patients and the general needs of the community.

The dynamic population is making comparisons between the rural and urban nursing care and therefore demands for better care due to them. The patient has the right to expect safe treatment from a competent nurse practitioner.

The nurse should assess the patient for signs of dehydration, the condition of the skin, cleanliness of the mouth, eyes and also the dependency level (Bastford & Slevin, 1995:212).

Van Dyk and Small (1997:21) stated that a dirty mouth does not only lead to complications, but also causes the patient discomfort. Elderly patients, injured patients, patients in coma and children are mostly affected. The nurse has a duty to assess whether the activities of daily living (bathing, brushing of teeth, combing of hair and skin care) are consistent with the patient's condition and age and to document all observations.

Apart from cleanliness and the basic human needs, this part of nursing never loses its importance. The appearance of the skin gives the first impression of the hygienic status of the patient. The literature review related to personal hygiene indicates that the goals of hygiene are the maintenance of healthy skin, increase cellular nutrition and circulation and to keep the skin intact as a defence against infections (Ellis & Nowlis, 1995:410).

Nine parts (components) of hygiene were selected in the study to be evaluated. See Table 2.1 for an outline of these parts (components). A discussion of each of the components will follow. The motivation for inclusion of these nine parts (components) were drawn from the researcher's personal experience towards hygienic practices in the Kavango region. They also link to the conceptual framework. (See point 2.5)

Table 2.1 The nine components of hygiene

- Hair care
- Eye care
- Ear care
- Mouth care
- Nose care
- Skin care
- Beard care
- Hand, nails and foot care
- Perineal care

2.4.2.1 Hair care

Hair, together with the skin and nails form part of the integumentary system. Hair developed from the embryonic epidermis and is therefore also called an epidermal derivative. Hair is also used for diagnostic testing. For example, dry, brittle hair may indicate an underactive thyroid (Carola, Harley & Noback, 1992:131-132).

The body, except the hand palms and the soles of the feet, is covered by hair. The most prominent area where the hair can be found is the head, pubic area and the axilla. The hair is part of the appendages of the skin together with the nails. Eye lashes, the fine hairs of the nose and ears protect those organs from dust and other harmful effects, for example insects. Beards are found on the faces of male people. Beard care will be discussed separately. Hair also has aesthetic value. Clean and neat hair is essential for both the hygiene and morale of the patient. For women, the condition of hair gives an impression to the viewers about her hygienic status.

According to Potter and Perry (1997:1053), a person's appearance and feeling of well-being often depends on the way the hair looks and feels. This can be maintained by brushing, combing and shampooing of the hair and by shaving of male patient.

The rationale behind hair care:

- The patient will have healthy hair and a healthy scalp, which are signs of good personal hygiene.
- Sense of comfort and self-esteem can be achieved.
- Patient's well-being will contribute to the recovery process.

Hair care practices are ungerdone routinely to meet the patient's hygienic needs. The nurse must remember that a patient remains aware of his appearance at all times, but sometimes fail to maintain hygienic condition due to ill health. Before hair care, assessment of the condition of the hair and the scalp is to be done.

The outcome criteria for clean hair according to Potter and Perry (1997:1053) is described as follows:

The hair should be:

- clean;
- shiny;
- untangled; and
- an absence of lesions on scalp.

Their (Potter & Perry's) criteria were adapted for outcome criteria on how hair care hygiene should be. The cultural aspects of the Kavango people were taken into consideration with an item on whether females hair were plaited or not (see Table 2.2).

A study by Rothschild, Long-Middleton and Berry (1996) reveals that changes in nursing resources such as an inadequate number of nurses, forces fewer nurses to do more and in less time. Consequently, each activity will be done halfway. The care of patient's hair is mostly neglected or overlooked in case of staff shortage. Supervisors have to be vigilant, making sure that special attention is paid to hair care.

Table 2.2 Outcome criteria for hair care

• Clean hair
• Shiny hair
• Combed hair
• Plaited hair

2.4.2.2 Eye care

We live primarily in a visual world, and sight is our dominant sense. The specialized exteroceptors in our eyes constitute about 70 percent of the receptors of the entire body, and the optic nerves contain about one third of all the afferent nerve fibres carrying information to the central nervous system (Carola, Harley & Noback, 1992:488).

The abovementioned anatomical and physiological information indicates the vital importance of the eye. Lack of hygienic care here could lead to crippling effects.

Normally, the eyes are cleansed by tears while the eyelids and lashes prevents the entrance of particles into the eyes. Eye care is indicated in cases of unconsciousness, eye operations, eye diseases with drainage. Unconscious patients require frequent eye hygiene and care because the eyes tend not to close totally and this causes dryness of the conjunctiva. Other patients, for example with hand and arm injuries, tired, elderly patients are assessed for deficit to perform and should be assisted by the nurse.

In Table 2.3 an outline of the outcome criteria is provided of what is expected from eye care.

Table 2.3 Outcome criteria for eye care

• Clean conjunctiva
• No sign of inflammation
• No watery eyes
• No eye discomfort

The abovementioned criteria, although at an elementary level, also forms part of the nurse's function in preserving vision and preventing blindness.

2.4.2.3 Ear care

The ears are responsible for both hearing and equilibrium. To an extent ineffective hygiene might affect hearing and equilibrium.

Ear hygiene is normally done during bed-bath, the ears are assessed for signs of inflammations, drainage, discomfort or pain. In some cases, ear wax may cause disturbance in hearing, therefore, the nurse has to make a distinction between loss of hearing due to excessive earwax and loss of hearing caused by other factors.

Earwax can be visible in the ear canal. In this case, gentle, downward retraction at the entrance of the ear canal may cause the wax to loosen and slip out. The use of sharp objects such as

toothpicks to remove wax is strictly prohibited as these may cause trauma to the ear canal and rupture of the tympanic membrane. Potter and Perry (1997:1068) say that impacted cerumen can usually be removed by irrigation. Prior to irrigation, the ear wax is softened by instilling three drops of glycerine and then irrigated with warm water (temperature of 37 degrees Celsius).

Hearing aids, a device to compensate for loss of hearing, should also be taken care of. It is important to note that some hearing aids are not worn under heat lamps, or in a very wet or cold weather to prevent damages of the ear and the apparatus.

Table 2.4 indicates the outcome criteria for ear care.

Table 2.4 Outcome criteria for ear care

• Ears clean
• No excessive ear wax
• No ear discomfort
• No hearing disturbance
• No damage to the ears
• No abnormal discharge

2.4.2.4 Mouth care

The mouth is also called the oral cavity. In the mouth food is masticated (chewed) by the ripping and grinding action of teeth. Food is also moistened by saliva. Saliva also cleanses the mouth and teeth of cellular and food debris. It also buffers the acidity of the oral cavity. Taste buds cannot

be stimulated until the food molecules are dissolved by saliva (Carola, Harley & Noback, 1992:761-765).

Patients being admitted in hospitals have insufficient saliva secretion, either from their illness, treatment or not being able to eat. The normal physiological cleaning action of saliva is therefore lost. The nurse has therefore to substitute by means of good mouth care.

The purpose of mouth care is to clean the mouth and teeth of food particles and debris, to prevent irritation and infection of the gums and to reduce unpleasant odours of the mouth . Oral care is a basic human need. It consists of assessment, treatment and care of teeth, mouth and gums. Illness and contingent problems involving diet and fluids cause the patient's mouth to need constant attention. A dirty mouth causes the patient discomfort, as the mouth becomes dry and unpleasant tasting due to over accumulation of mucus, epithelial cells and bacteria. Potter and Perry (1997:10 & 3) sited that a dirty mouth is characterised by accumulation of food and mucus in the vestibule of the mouth, between teeth and underneath the plate of a denture. The condition is worse in patients who breathe through their mouth because of blocked nose. Stuporeus patients, dehydrated, uremic and those with artificial feeding, if neglected, may develop gingivitis, stomatitis glositis and buccal ulcers. Halitosis is prominent in such cases.

Van Dyk and Small (1997:21) stated that dental health education with special reference to methods of hygiene aimed at preventing complications is of importance in nursing care. However,

the patient with potential oral health care needs is to be identified, so that a plan of action can be established to meet the needs.

Patients, who are in relatively healthier condition can perform oral care as they would at home. The nurse has to intervene for those who need assistance. Good oral hygiene involves cleanliness, comfort and the moisturising of mouth structures (Potter & Perry, 1997:1048). Brushing, flossing and irrigation are necessary for cleaning of the mouth. Ideally brushing of teeth every eight hours is effective for oral care. In general, the teeth are brushed and the inside of the mouth and the lips cleaned and moistened. Fluoride toothpaste is preferred for brushing teeth because fluoride protects the teeth and makes them hard and strong. Through brushing of the teeth, tooth decay can be prevented and the chance of trauma of the gums minimized.

In Table 2.5 the outcome criteria for mouth care is depicted.

Table 2.5 Outcome criteria for mouth

- Clean teeth
- No oral discomfort
- Smooth and hydrated oral mucosa
- No inflammation of the oral mucosa
- Intact oral mucosa
- Normal colour of oral mucosa
- No halitosis

It might be necessary to clean the patient's tongue and oral mucosa in addition to cleaning teeth in cases of unconscious patients or for those with dryness, sores or irritations of the mouth. Mouth care for unconscious patients is very important because of the dryness caused by limited or no fluid intake by the mouth, breathing through the mouth, or receiving oxygen with the drying effects on the membranes (Potter & Perry, 1995:1044).

2.4.2.5 Nose care

Our sense of smell (olfaction) originates in the nose. Air also normally enters the respiratory tract through the nose. In infants this is of special importance because , until 6 months of age, they are obligated nose breathers (Hudak, Gallo & Morton, 1997:107).

As noted before in this text, nose care is part of personal hygiene, which is part of a bed-bath. Patients needing nose care are:

- Unconscious patients.
- Patients with naso-gastric tube feeding.
- Patients with excessive secretions, causing ineffective breathing.
- Patients with nose injuries.
- Small children with running noses.

Excessive nasal secretions can be removed by suctioning (Potter & Perry, 1997:1069). The nurse

can also use a wet facecloth. In case of feeding and or suction tubes inserted through the nose, the tape should be changed on a daily basis.

In Table 2.6 the outcome criteria for nose care is presented.

Table 2.6 Outcome criteria for nose care

• Clean nose
• No nose discomfort
• No damage to the nose
• No abnormal discharge

2.4.2.6 Skin care

The skin is the largest organ in the body. It occupies almost 2 m^2 of surface area. With a mass or 4kg in an adult. The skin is involved in protection, temperature regulation, excretion of waste products, synthesis of Vitamin D, and is also an important sensory organ. The skin is part of the integumentary system (Carola, Harley & Noback, 1992:123 & 126 and Meij & van Papendorp 1997:98).

The normal skin is described by Kozier & Bufalino (1989:499) as being intact, smooth, supple, with good turgor, warm to touch with an appropriate colour to the person's ethnic heritage. The skin colour is determined by the presence of melanin, the accumulation of a yellow pigment called carotene and the colour of the blood reflected through the epidermis (Carola, Harley & Noback, 1992:128).

It is therefore possible to detect hemodynamic instability in many patients due to the pale colour of the skin caused by a reduction in cardiac output. As part of the hygienic care of the skin, the colour of the skin is therefore also noticed.

If the skin is smooth, supple and with good turgor, it means that the hydration status of the patient is adequate.

A warm skin indicates a sufficient cardiac output.

Importantly, the skin should be without lesions that may impire the integrity. Mucous membranes that line the passageways of the body open to the exterior should also be intact. If there are any wounds, the patient becomes vulnerable to the penetration of harmful micro-organisms. Fluids may also be lost. Hygienic care of the skin therefore also includes assessment of these aspects.

The skin hygiene can be maintained by giving a complete or partial bed bath, and can be administered either early in the morning, during the day or at bed time, depending on the needs of the patient.

Washing of the patient early in the morning and at any time, depending on the needs, is purposefully done to Kozier & Bufalino (1989:499).

- Cleanse the skin of dead epithelial cells, greasiness, germs, dried sweat, unpleasant odours and discharges.
- Soap lowers surface tension and helps in cleaning the skin. The soap contains cleansing agents. In contrast, the soap has a dryness effect and permission should be obtained from the patient in advance.
- Bath oil, used in bath water, provides an oily film on the skin that softens and prevents chapping.
- Skin cream, lotion and powder also provide a film on the skin that prevents evaporation and friction. However, it was observed that powder, when too much is used, may become hard and cause pressures, for example between the legs and armpits.
- Deodorant and antiperspirant diminishes body odour and reduces the amount of perspiration.
- Detergents are used for cleaning by some soap-allergic people.

It is advisable that, whatever soap, oil, cream, powder, deodorant or detergents are to be used, the patient's consent on the type should be obtained.

In Table 2.7 the outcome criteria for skin care is presented.

Table 2.7 Outcome criteria for skin care

• Smooth skin
• Supple skin
• Good turgor
• Moist skin
• Soft
• Warm
• Normal colour
• Intact skin
• Clean

2.4.2.7 Beard care

Shaving of facial hair is done, mostly after a bed-bath. This can be done either by the patient himself, with the assistance of a nurse or by a relative, depending on his preference and condition. Daily grooming of beards is essential and preferable, because food particles can collect in hair. However, Potter & Perry (1985:419) say that nurses never shave off beards without the patient's consent. It is not advisable to use a communal razor because of the spread of HIV/AIDS infections. Alternatively, disposable safety razors are effective. When shaving soap is used, patient's choice should be considered as important.

In Table 2.8 an outline of outcome criteria for beard care is presented.

Table 2.8 Outcome criteria for beard care

• Beard shaved • Beard groomed

2.4.2.8 Hands, nail and foot care

Hygiene of hands and nails also forms part of aesthetic care. Hands are our "intimate" part because of our contact with food and sometimes also other people. Hands also could lead to the spread of infection if not cleaned, especially in a hospital situation.

The condition of the hands and feet also tells us about a patients ability to take care of him/herself, as well as possible abnormalities.

The frail and elderly usually have difficulty in taking care of their feet. Furthermore, diabetic patients may have sores on their feet that are difficult to heal.

The nurse is therefore in the unique position to assess patients with potential problems or deficits in self-care activities.

The nails also provides diagnostic information. The nails are modifications of the epidermis and is part of the integumentary system. They appear pink because the nail is translucent, allowing the red colour of the vascular tissue underneath to show through. White nails may be a sign of liver

disease (Carola, Harley & Noback, 1992:134). If they are not convex, circulatory problems are usually suspected.

Daily bathing of feet and regular trimming of toenails promotes cleanliness, prevents infection, stimulates peripheral circulation and control odour by removing debris from between toes and under toenails (Loeb, 1992:93).

Foot and nail care can be provided simultaneously, except the finger nails, which can be separated from foot care. Although these are parts of personal hygiene, which can be performed during bed-bath, these areas require special care as foot problems may cause discomfort such as foot mobility. Complete hygiene includes attention to the nails and feet. The purpose is to clean under the patient's nails where secretions, loose skin and pathogens can collect and to reduce perspiration. Foot powders and deodorants help prevent this problem.

Calluses are usually the cause of pressure from the shoes, which can be softened by soaking the feet in warm water at the same time, hard nails are also softened. A podiatrist (foot specialist) may assist in caring of feet and nails. In any case, toe nails can be soaked in warm water and then cut off with nail clippers or scissors. Hand nails are also soaked in water, if needed and dried, then the nails are cut or filed straight across beyond the end of the finger.

In Table 2.9 the outcome criteria for hands, nail and feet care is presented.

Table 2.9 Outcome criteria for hands, nail and feet care

• Nails short and clean
• Nails convex
• Pink nail beds
• No sign of inflammation
• Smooth nail edges

2.4.2.9 Perineal care

The perineum is a diamond shaped area. This region is anteriorly bounded by the symphysis pubis, posteriorly by the inferior tip of the coccyx and laterally by the ischial tuberositas. The anterior portion is called the urogenital region and the posterior portion the anal region (Carola, Harley & Noback, 1992:923).

This region is therefore a very private and sensitive part of human anatomy. This part of the bed-bath is thus a very embarrassing procedure for many patients, especially the elderly people who find it very difficult to appear naked in front of an outsider. Gender differences, for example of the nurse and the patient may cause discomfort. Whatever term the nurse uses, it needs to be one that the patient understands and that is comfortable for the nurse and the patient to use, for example "private parts" is often familiar to older patients.

Good perineal care is a matter of careful cleansing. The fact that excretion of faeces and urine and vaginal discharge in the area of perineum may serve as a reservoir for bacteria, the importance

of perineal care cannot be over-emphasized. Cleansing of the area is always performed from front to back to prevent bacteria entering the urinary tract. Patients with indwelling catheter, incontinent, unconscious, comatose patients, patients with pelvic fractures to mention but a few, need intensive perineal care by the nurses.

Depending on the patient's ability to perform the activity, the patient is provided with clean water, soap and cloth to complete the task. For those who are not able to do it, the nurse has a duty to explain the procedure to the patient, to allow for privacy and sufficient time and to clean the private part of the patient politely.

A vaginal irrigation is a special type of care to female patients, but not necessary for healthy patients as it may lead to infection. It is very important to dry the perineum thoroughly because moisture influences the growth of micro-organisms. For post delivery patients, a perineal pad is applied from front to back to prevent contamination of the vagina and urethra from anal excretion. While secretions tend to collect around the labia minora and facilitate bacterial growth in female, the smegma also collects under the foreskin in male patients and causes the same problems in males. Therefore, the nurse performing perineal care should be skilful, observant to be able to do assessments and to document the findings. Clean underwear should also be given to the patient after perineal care.

In Table 2.10 the outcome criteria for perineal care is provided.

Table 2.10 Outcome criteria for perineal care

• No itching
• No discomfort
• No abnormal discharge

Following the demarcation on what is meant by hygiene, conceptual framework was selected from which the study could be conducted.

2.5 CONCEPTUAL FRAMEWORK

A conceptual framework is one that has been developed by the researchers through identifying and defining concepts, and proposing relationships between concepts (Brink, 1996:29). Good research builds on existing knowledge, and that one has to learn from past experiences. Within this research, different authors use the term "conceptual" differently. The basic issue, however, in the conceptual framework is the generalisation of ideas (Polit & Hungler, 1995:96).

A conceptual framework is therefore an effort to integrate and accumulate knowledge. It represents views about the nature of the topic under study, for example the quality of nursing care and the nurse-patient-relationship. Since researchers are often interested in learning about the state of knowledge with regard to a particular issue, it is very important to develop a broad conceptual context into which a research problem will fit.

For the purpose of this study, the conceptual framework was based on:

- The scope of practice for the registered and enrolled nurse that are described in the Namibian Nursing Act, Act No. 30 of 1993. (Government Gazette 1999:64)
- Virginia Henderson's theory of the human needs (see Figure 2.2).

This framework, as depicted in Figure 2.2, identify the magnitude of the problem on the base of the triangle. Flowing out of the problem are the two (2) "directional" components, namely:

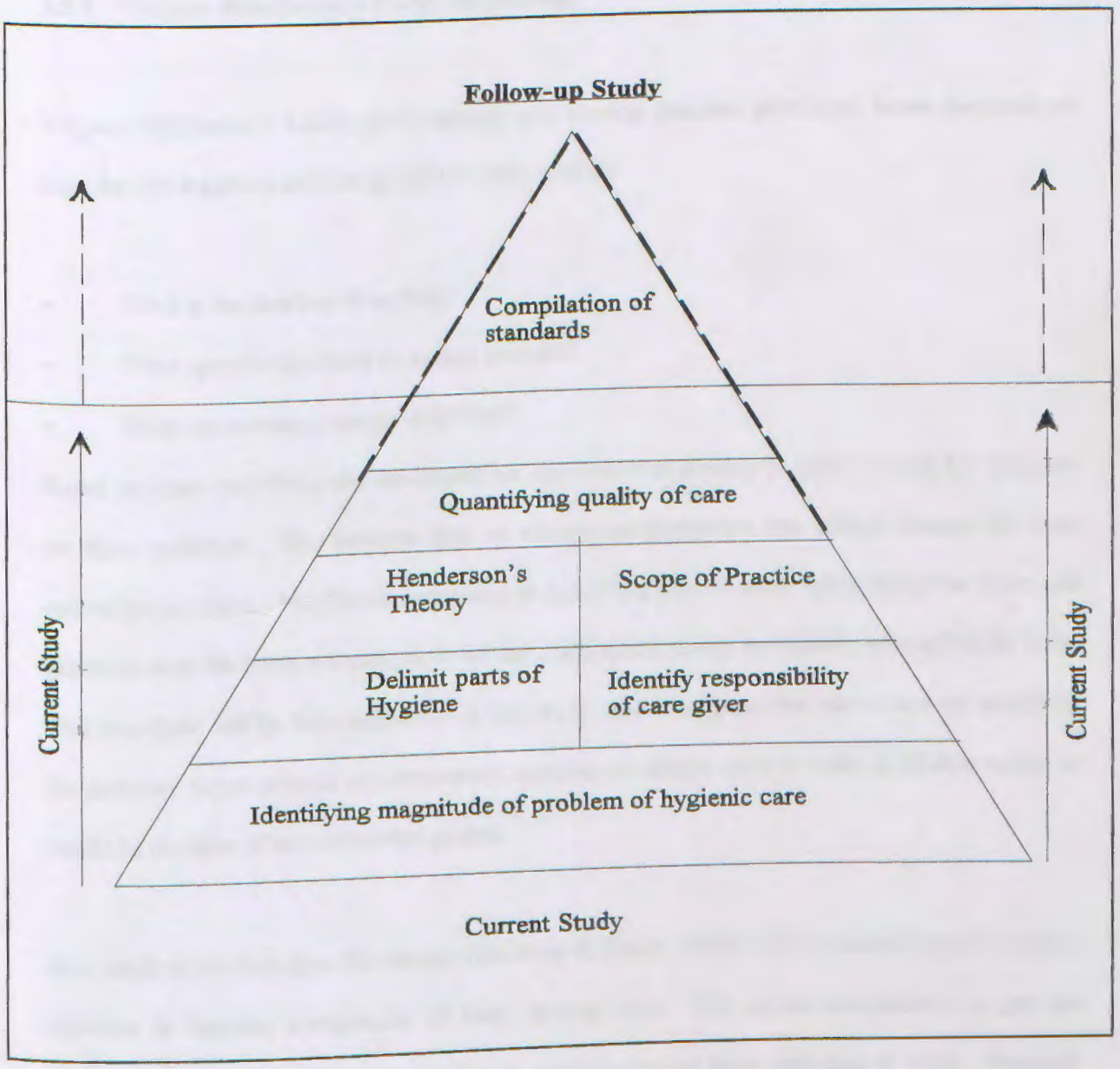
- What is meant by hygiene?
- What is the responsibility of the care giver with regard to hygiene?

Henderson's theory served as departure point for the demarcation of hygiene and the scope of practice for nurses provided the legal responsibility for the care giver.

Both Henderson's theory and the scope of practice for nurses will be discussed.

Figure 2.2

Conceptual Framework of the Study



2.5.1 Virginia Henderson's theory on nursing

Virginia Henderson's belief about nursing and nursing practice stimulated some questions as described by Bastford and Slevin (1995:2-13), such as:

- What is the practice of nursing?
- What specific functions do nurses perform?
- What are nursing's unique activities?

Based on these questions, she developed her definitions of nursing to communicate her thoughts on these questions. She believes that an occupation/profession that effects human life must outline its functions. Henderson succeeded in describing patient-nurse relationships as warm and generous with the nurse wanting to do all she could do to satisfy the patient, who asked for little. This statement will be fully supported in this study, and it happens that nurses are not satisfying the patients. Some patients are introverted, and are not always open to indicate all their needs, as would be the case of an extroverted patient.

As a result of her thoughts, Henderson (Bastford & Slevin, 1995:2-13) delineated specific nursing activities in fourteen components of basic nursing care. This assists the patients to get the minimum care, which will then assist him to perform normal daily activities of living. Fourteen components were identified, these should be considered by the nurse in order to make it easier for the patient during his/her hospitalisation.

In viewing the concept of "human", Henderson identified the following major components:

- Components reflecting biological needs
- Components addressing psychological needs
- Components related to sociological aspects
- Components related to spiritual needs

This study is only utilizing the components that reflect biological needs and then only the following specific components of this particular group:

To keep the body clean and well groomed and protect the skin.

This is the eighth component in this group and is in line with the objective of this study. Most important for her here is the fact that a clean and well groomed body provides comfort and is a pleasure to the patient.

See Table 2.11 for an outline of Henderson's 14 components.

According to Henderson (Bastford & Slevin, 1995:213) the fourteen fundamental needs on which nursing care should focus are influenced by:

- age;
- emotional condition;
- social and cultural background; and
- physical and mental condition.

Table 2.11 Henderson's fourteen components of basic nursing care

1.	Breathe normally.
2.	Eat and drink adequately.
3.	Eliminate body wastes.
4.	Move and maintain desirable postures.
5.	Sleep and rest.
6.	Select suitable clothes - dress and undress.
7.	Maintain body temperature within normal range by adjusting clothing and modifying the environment.
8.	Keep the body clean and well groomed and protect the integument.
9.	Avoid dangers in the environment and avoid injuring others.
10.	Communicate with others in expressing emotions, needs, fears or opinions.
11.	Worship according to one's faith.
12.	Work in such a way that there is a sense of accomplishment.
13.	Play or participate in various forms of recreation.
14.	Learn, discover or satisfy the curiosity that leads to normal development and health and use the available health facilities.

(George, 1995:72)

It should be well understood that the working domain of nurses is not restricted to general hospitals only, but nursing homes, district nursing and home care are also included. The Ministry of Health and Social Services in the Namibian context has already started moving into a comprehensive nursing care approach with special emphasis on home based care. The approach is advantageous, because it alleviates the problem of overcrowded wards, by chronically ill patients.

Henderson also stresses the importance of planning care, which she described in her model as a

schematic method for the provision of care (Bastford & Slevin, 1995:213). Her model can thus be summarized as follows:

- The unique function of the nurse
- The patient's pursuit of independence
- Basic nursing care on the basis of fundamental needs
- Planning of care that is to be provided

As will be discussed further on, her model links with the Scope of Practice of the registered nurse in Namibia.

Henderson's model (George, 1995:73) addresses the nursing paradigm in terms of:

- ***Man:*** as an inseparable entity because the mind and body are one. The individual and his family are to be regarded as a single unit.
- ***Environment:*** which is all the external factors and conditions that affects the life and the development of the human being.
- ***Health and illness:*** while health is a certain quality of life, which Henderson associates with independence, illness is associated with dependence and incapacity of the individual - health is therefore a restriction on independence.
- ***Nursing:*** is to help the individual in a supplementary role, in order to assist the individual to regain his independence as soon as possible. Because of Henderson, the model is very

popular among practitioners who find more complex models difficult to implement (Bastford & Slevin, 1995:223). Furthermore, the attitude of the nurse is important in producing nursing care; for example, there is no reason for a nurse to be at the bedside of a patient if she feels hurried, does not have sufficient time to communicate to the patient and give him sufficient attention or if she cannot concentrate. Therefore, the nurse must be aware of her attitudes and how it affects the quality of nursing care. Honesty in conducting nursing examinations should prevail for the nurses to be sure of what abnormalities they are looking for. This will enhance the standard of nursing and therefore will contribute to the improvement of quality nursing care (Mufukeng & Roos, 1999). The time is ripe for nursing to actively take advantage of capacity and potentials of the nursing standards as tools that carry out tasks, in order to contribute to the well-being of patients and advancement of the nursing profession.

2.5.2 The scope of practice of persons who are registered or enrolled under the Nursing Act, Act No. 30 of 1993

The purpose of regulating the practice of nursing is to protect the public and to make individual practitioners accountable for actions of professional service. This is calling upon specialised knowledge about management of illness, injuries or infirmity and the restoration of optimum function or the achievement of dignified death according to Ellis and Hartley (1995:124). However, Chaska (1990:314) argues that nurse's personal attitudes or beliefs should not limit their concern for human dignity and the provision of quality nursing care. The regulation related

to the nursing practice, which protects the public is summarised in the Scope of Practice of Nursing Categories.

Before the independence of Namibia the nursing profession was guided by the South African Nursing Council. After Namibia became independent on 21 March 1990, the Government started with the formulation of its own acts, rules and regulations. As a result, the South African Nursing Act was replaced by the Namibian Nursing Act, Act No. 30 of 1993, published in the Government Gazette of the Republic of Namibia, dated 28 January 1999, no. 10, Government Notices. The scope of practice for all nursing categories is described as follows:

Scope of practice for registered nurse

The Nursing Board under section 28(2) of the nursing profession act, 1993, sub-section says that the registered nurse's scope of practice shall entail the prescription, promotion or maintain hygiene, physical comfort and reassurance of patient.

The scope of practice of a registered midwife

In Article (3)(g) it is stated that the scope of practice of a registered midwife shall entail the prescription, promotion or maintenance of hygiene, physical comfort and reassurance of the mother and child.

The scope of practice of enrolled midwife

Article 4(b) stipulates that the scope of practice of the enrolled midwife entails the promotion or maintenance of hygiene and physical comfort and the reassurance of the mother and child.

The scope of practice of enrolled nurse

Paragraph 5 of the Namibian nursing Act, Act No. 30 of 1993, states that the enrolled nurse's scope of practice entails the promotion and maintenance of the hygiene, physical comfort and reassurance of patients. (Government Gazette of the Republic of Namibia, 1993).

Together with Henderson's theory of human need, this forms the basis of the conceptual framework for this study.

2.6 SUMMARY

The literature review is a term used to identify and search for written information on a topic under study. It is also a way of finding methods, ideas on similar studies, whereby comparisons can be made with the proposed study.

Personal hygiene is part of daily individual activities. They hygiene of patients in wards depends on the patient-nurse-ratio. Similarly, if the ward is understaffed the cleanliness of the patients

tends to suffer due to lack of attendance.

Cultural differences play either positive or negative roles to personal hygiene. Some rural elderly people who were not exposed to daily bath and cleanliness, believe that frequent bathing is injurious to health. To them, personal hygiene is not regarded as a priority and this factor should be considered during the hospitalization of elderly people.

In the literature specific expectations were found on hygiene. What is needed to receive hygienic care is well documented. Ways to achieve this "documented" care were also briefly mentioned, namely to formalize standards. This, however, does not form part of this study, but it is necessary to review in order to put this particular study in perspective. This study is on the quality of hygienic nursing care.

From the literature review it was decided to construct a conceptual framework based on the work of Virginia Henderson and the Scope of Practice of the Registered Nurse. A close relationship was found.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

The research method is the technique used by researcher to collect data and to reach a logical conclusion, which will be described in this chapter. According to Polit and Hungler (1995:194) a research design is developed to refine procedures for obtaining, organizing and analysing data.

In this study, the term is used to refer to the strategies used in the collection of data, data collection and data analysis. Since most of the information relates to how the research will be carried out in relation to findings, this section is regarded as the heart of the research.

3.2 PURPOSE

The purpose of this study was to determine the quality of nursing care regarding personal hygiene of patients admitted to a hospital in the Kavango region.

3.3 STUDY OBJECTIVE

To measure the quality of nursing care concerning the personal hygiene of patients admitted to a

hospital in Kavango region.

3.4 RESEARCH DESIGN AND METHODOLOGY

The study is a descriptive survey by means of a checklist and is more concerned about the provision of accurate information concerning the quality of nursing care of patients admitted to a hospital in the Kavango region.

Polit and Hungler (1995:640) view a descriptive research study as a research that has, as its main objective, the accurate portrayal of the characteristics of individuals, situation and frequency with which certain phenomena occur. It is also descriptive in nature, concerned with fact finding rather than relationships amongst variables. The study, therefore will proceed without a hypothesis, with the following research question:

"What is the current quality of basic nursing, specifically related to personal hygiene in the Kavango region?"

3.5 THE POPULATION AND SAMPLE

The target population refers to the entire group to which the results of the study apply to (Cormack, 1996:15; and Uys & Basson, 1998:86).

In this study the population consisted of all the patients admitted to a hospital in the Kavango for a period longer than seven (7) days at a specific time. Thirty (30) patients met the criterium.

The motivation for the abovementioned inclusion criterium was that all aspects of hygienic care could only be evaluated in patients who stayed for at least seven (7) days or more. These patients tend to be more dependent on the care of nurses and sub-optimal care from the nurses is easier to evaluate.

3.5.1 The sample

All the patients who met the inclusion criteria for the population, were included in the study. Thus the total population was used.

In total thirty (30) patients were observed over a period of seven (7) days each during which time 210 observations were conducted. The observations were conducted during:

- December 1999
- April 2000
- June 2000

These three months were chosen because patients admitted in between did not remain hospitalised for the whole period of seven (7) days. Thus, it was not a totally convenient sampling method,

but based on inclusion criteria.

Most of the patients, twenty (20) in total, were selected during June 2000. The reasons for this increase were due to:

- Patients being admitted with malaria.
- Patients being admitted with injuries sustained as a result of the ongoing war.

3.6 RESEARCH INSTRUMENT

The means of obtaining the desired information was through a checklist.

3.6.1 Development of the checklist

The checklist was developed by the researcher. Checklist items were formulated based on the objective of the study and the specific information sought.

The literature on hygiene was studied and the Scope of Practice for Registered Nurses as well as Henderson's theory on human needs were examined. Relevant aspects were extracted.

The checklist was then fully developed and submitted to five (5) registered nurses who made changes where necessary (see point 3.8 Validity and reliability).

3.6.2 Design of the checklist

The checklist was structured into two sections:

- Section one contains biographic information. This section had only one (1) item which elicited information regarding gender.
- Section two was structured to obtain information on hygiene. The checklist consisted of close ended questions in the format of "yes"; "no"; or "not applicable".

The observer had to tick in the relevant column. See Annexure C for an example of the checklist.

The items on the checklist consisted of the different components (parts) of hygiene that have been identified through the literature, the conceptual framework and through the validation process.

The relevant nine (9) components (parts) were:

- hair care;
- eye care;
- ear care;
- mouth care;
- nose care;
- skin care;

- beard care;
- hands, nail and foot care; and
- perineal care.

Each of these components consisted of specified outcome criteria against which the specific component was measured.

> **See:** * Points 2.4.2.1 to 2.4.2.9 in Chapter Two.
>
> * Annexure C

An additional criteria was included for each component (part), namely if appropriate nursing action was taken. This is in line with the conceptual framework and more specifically the scope of practice where proper record-keeping is required.

It was also possible to document comments on this instrument.

3.7 PILOT STUDY

Before distribution, the checklist was pretested. This was done to identify any confused wording and to establish content validity.

Pretesting was done by selecting five (5) registered nurses from this specific hospital in the Kavango region. They were selected purposely because of their managerial positions and clinical skills.

These five (5) registered nurses agreed on the type of items and the format of the checklist. They all agreed upon the face validity of the instrument (see point 3.8 Validity and reliabilty).

Four (4) patients were selected for the pilot study. These four (4) patients were the only patients available during the period of a month before the initiation of the main study who met the inclusion criteria for the population.

3.8 VALIDITY AND RELIABILITY

As mentioned when discussing the pretesting of the instrument, the five (5) selected registered nurses agreed upon the face validity.

By scrutinizing the literature and incorporating the conceptual framework, content validity was established. The five (5) selected registered nurses were also requested to estimate the content validity of the checklist on the basis of their experiences. Content validity confirms the representativeness of items to measure what they are supposed to measure (Treece & Treece, 1992:127).

Reliability is another important characteristic of a research instrument. Reliability refers to the degree of consistency and accuracy with which the instrument measures an attribute (Polit & Hungler, 1987:406). In this study the instruments yield the same response when used by different researcher on the same patient during the pilot study.

3.9 COLLECTION OF DATA

3.9.1 Ethical considerations

Permission to conduct this study was obtained from the Ministry of Health and Social Services (see Annexure B).

The aim of the research was explained to the patients by the researcher. The respondents were assured that their names were not going to be written down on the checklist. After the explanation, the researcher obtained the patients informed consent.

Confidentiality was also assured. The patients were also told that the results would not be divulged to anyone. All information would be kept confidential and the responses would be summarised statistically.

3.9.2 Preparation for collection of data: the training of research assistants

Research assistants were appointed to collect data so that the Hawthorne effect could be avoided as the researcher herself is a nursing manager in the specific hospital. Four (4) registered nurses were selected based on their seniority and clinical skills. They accompanied the researcher during the pilot study after they had received training by the researcher on:

- the principle of neutrality, confidentiality and ethical considerations;
- the content of the checklists; and
- their role in data collection.

3.9.3 Venue and time spent in collecting data

The data was collected in one (1) hospital in the Kavango region of Namibia. The research assistants spent three (3) weeks in collecting data, namely:

- seven (7) days during December 1999;
- seven (7) days during April 2000; and
- seven (7) days during June 2000.

The research assistants worked under close supervision of the researcher. Each patient was visited once a day between 10:00 and 12:00. This time slot was based on the following:

- Handing over the report from the night staff to the day staff is done early in the morning (06h45).
- Most of the routine activities, such as bed-bath, dusting of the ward, breakfast for patients and ward rounds were completed by ten o'clock in the morning. Records could also be completed by that time.
- It was also possible to observe all the patients at once, for example ten o'clock each time, because the patients were scattered in different wards. Data was therefore collected after the tasks were already performed by the nurses, but not during the time the procedures were done.

3.10 CODING OF COMPLETED CHECKLISTS

The items were given code numbers. The coded responses were transferred to the computer for analysis.

3.11 PLANNING FOR DATA ANALYSIS

The code data was analysed by means of the Microsoft Exel 2000 programme. Data is presented in the form of tables and graphs which appear in the chapter for analysis of data.

3.12 SUMMARY

In this chapter the researcher has reported on the research methodology. The descriptive design was used for collection data through checklists. The checklists were completed by research assistants under the supervision of the researcher. Data gathered is going to be analysed and described in Chapter Four.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents the analysis, presentation and discussion of findings which are based on the information gathered from thirty (30) patients who participated in this study.

The instrument contained items that elicited information on biographical background as well as items that evaluated the quality of hygienic care. The procedure for the utilization of the instrument (checklist) was discussed in the previous chapter.

The data was collected and analysed by means of the Microsoft Exel 2000 programme.

Frequencies and percentages were completed. Data was presented in the form of tables and bar graphs, and were obtained from three (3) types of possible responses from the checklist:

- Yes;
- No; and
- Not applicable.

4.2 REITERATION OF THE OBJECTIVE TO BE ATTAINED

The objective to be attained in this study is listed below:

- To measure the quality of nursing care concerning personal hygiene of patients admitted to a hospital in the Kavango region.

Responses to each item are analysed and presented below.

4.3 BIOGRAPHICAL INFORMATION

Although biological information was not the focus of this study, it was included because the variables such as gender and age might have an effect on the hygienic needs of patients.

Table 4.1 Outline of population

	Stage 1	Stage 2	Stage 3	Total	Percentage
Male	1	2	5	8	26,7
Female	2	2	9	13	43,3
Paediatric	0	3	6	9	30,0
Total	3	7	20	30	100,0

As indicated in Table 4.1, of the 30 patients, eight (26,7 %) were male, thirteen (43,3 %) were female and nine (30 %) were paediatric patients.

In this study paediatric patients are younger than twelve (12) years.

The reason for the higher number of females in this study is because it is the function of the female to collect water at the river. Unfortunately when conducting this study, a significant number of rebel soldiers from Angola were crossing the river and they also layed antipersonnel landmines. Some of the female respondents in this study were exposed to these landmines.

4.4 INFORMATION ON HYGIENIC CARE

This part of the instrument (checklist) focussed on the following nine parts:

Part 1: Hair care

part 2: Eye care

Part 3: Ear care

Part 4: Mouth care

Part 5: Nose care

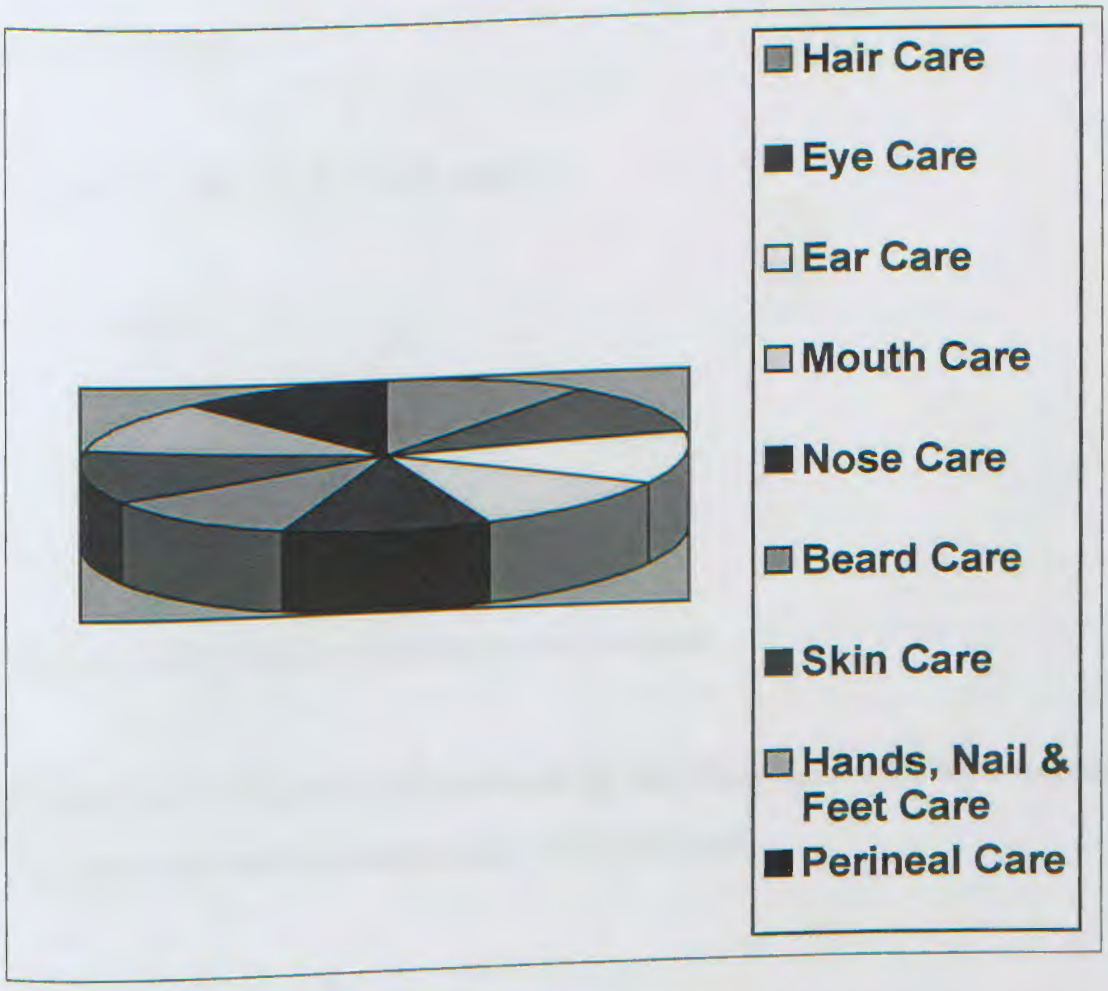
Part 6: Skin care

Part 7: Beard care

Part 8: Hands, nail and foot care

Part 9: Perineal care (see Figure 4.1)

Figure 4.1 Pie diagram representing the nine components of hygiene



Provision was made for "yes", "no" and "not applicable" responses. Provision was also made for comments by the researcher and research assistants.

In this discussion, the total observations (a total of 210), will be referred to as "N", as the statistical analysis was based on this value.

A discussion of the different parts (aspects) is presented.

4.4.1 Hair care

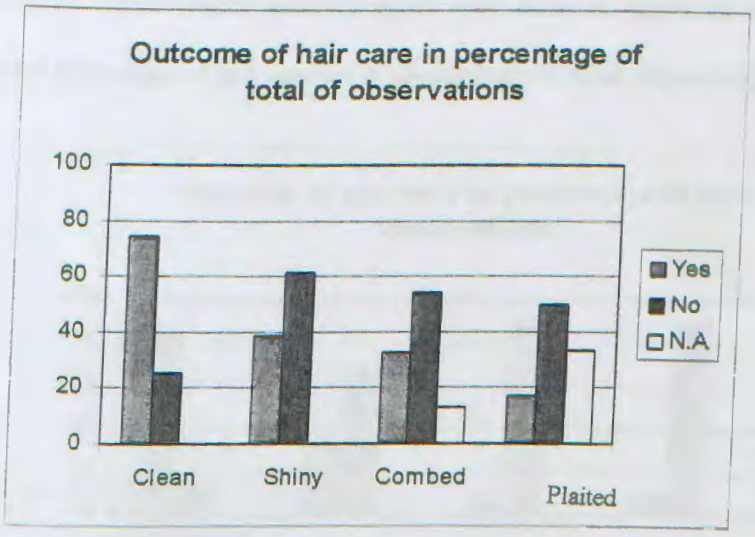
Hair care was being evaluated with regard to:

- cleanliness
- shiny or not
- combed or not
- plaited or not

A total of 210 observations for each aspect had been done.

As is indicated in Figure 4.2, in hundred and fifty three observations (72,9 %), it was found that the patients' hair had been washed together with the bed-bath.

Figure 4.2 Outcome of hair care as a percentage of total observations



This result must be seen in perspective. During the week of respective observations each patient was observed seven (7) times for this particular aspect of hygiene. It is, however, true that many patients may not wash their hair each day.

Although all the patient's hair did not appeared to be shiny or combed, they appeared neat and hygienic. Not all the female patients preferred their hair to be pleated.

4.4.2 Eye care

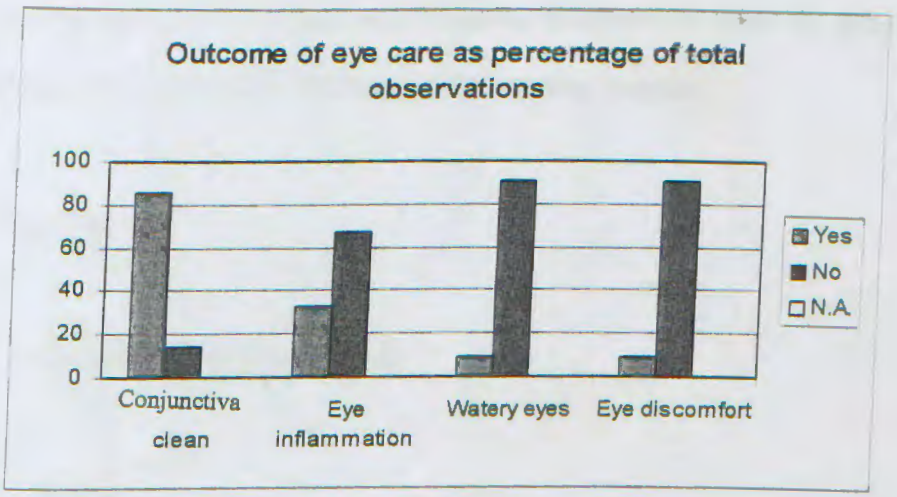
Evaluation on eye care was done with regard to:

- cleanliness of the conjunctiva
- the presence of eye inflammations or not

- watery eye
- eye discomfort

A total of 210 observations for each aspect were done as illustrated in Figure 4.3.

Figure 4.3 Outcome of eye care as a percentage of total observations



In only nineteen (9 %) of the observations, patients with watery eyes were found.

Twenty one (10 %) of the patients experienced eye discomfort.

According to Viljoen & Uys, (1989:542), the abovementioned are warning signs of possible abnormalities.

The high incidence of eye inflammation, namely sixty three or 30 % is a matter of concern.

These findings were, however, not recorded in the patients' records. Therefore, it is very difficult for the nursing personnel to intervene.

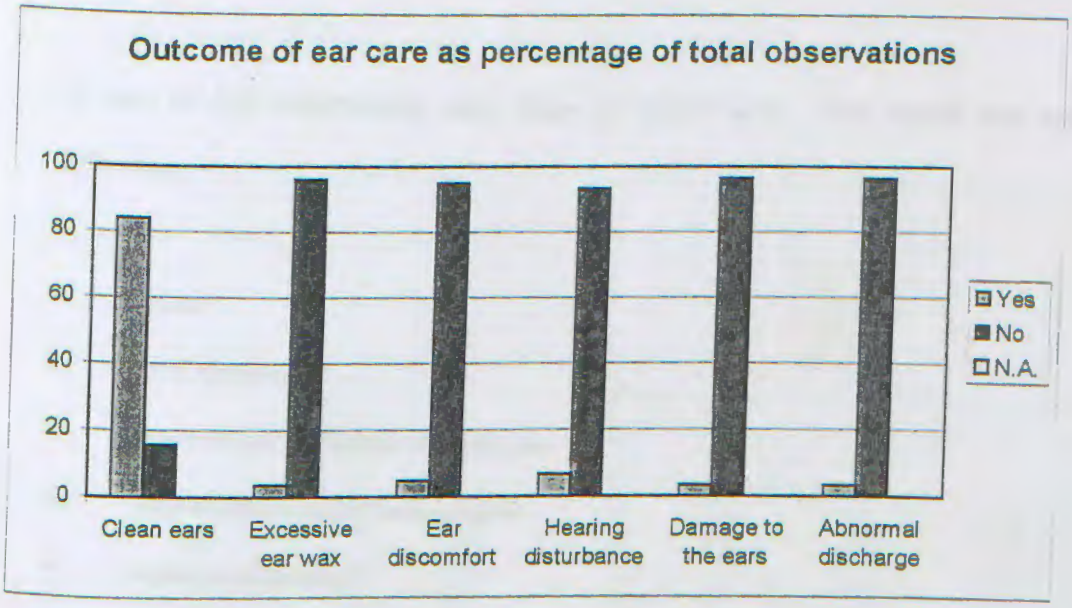
It does not fit according to Searle and Pera (1992:150), record-keeping is an essential component of the nursing process. Therefore record-keeping should not be taken for granted, but should be regarded as an integral aspect of the process for nursing practice.

4.4.3 Ear care

The ears were observed for the following:

- cleanliness
- excessive ear wax
- ear discomfort
- hearing disturbances
- damage to the ears
- abnormal discharge

Figure 4.4 Outcome of ear care as a percentage of total observations



In hundred and seventy seven (82 %) of the total observations, the ears of the patients were found to be clean.

In eight (4 %) patients, excessive ear wax was found. Also in ten patients (5 %) ear discomfort was observed as well as hearing disturbances in seven percent (7 %) of the patients.

None of these problems experienced by the patients were recorded in their records.

Interventions are difficult when proper recording has not been done.

4.4.4 Mouth care

A total of 210 observations were done on mouth care. The mouth was observed for the following:

- clean
- oral discomfort
- smooth and hydrated oral mucosa
- inflammation of the oral mucosa
- intact oral mucosa
- normal colour of oral mucosa
- halitosis

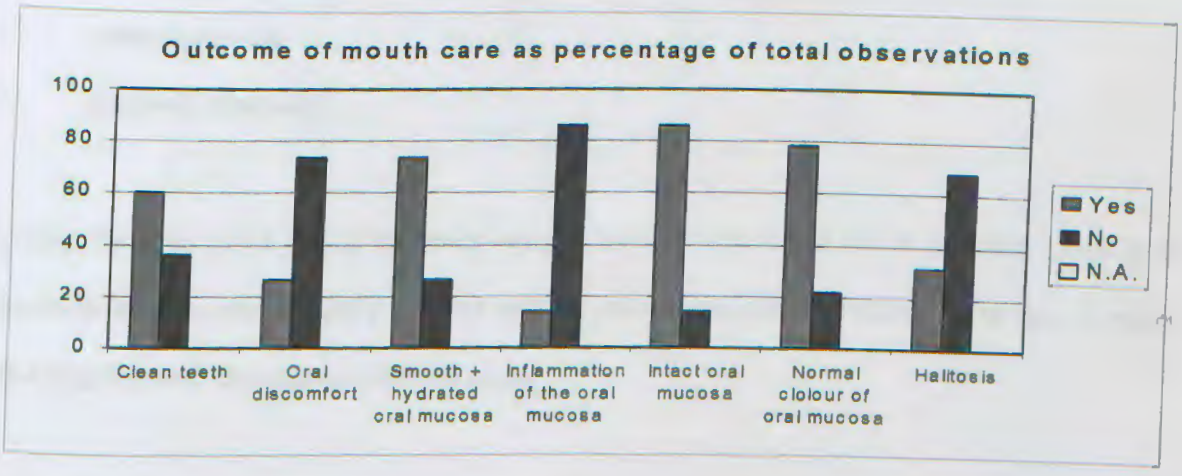
As part of the observations, it was also noted whether the patient's mouth care was attended at least twice a day. This was only the case in hundred and two (48,5 %) of the observations. This might be due to the fact that many patients were not in possession of tooth paste or they were unable to use the traditional sticks to clean their teeth.

In one hundred and twenty seven (60,4 %) observations, the patients' teeth were evaluated as to be clean. This finding reflects negatively on basic nursing care as one would regard this as a "fundamental" hygienic right of each patient.

Record-keeping was insufficient, and only in ninety three (44,2 %) of the observations referrence to these problems were found in patient records.

Nursing intervention depends on adequate assessment data that is present in patients' records.

Figure 4.5 Outcome of mouth care as a percentage of total observations



The high incidence of halitosis, sixty eight observations (32 %), correlates and is connected with the oral discomfort and unclean teeth.

Halitosis affects patients' general comfort as they may be aware of it as well as their visitors, relatives and health personnel.

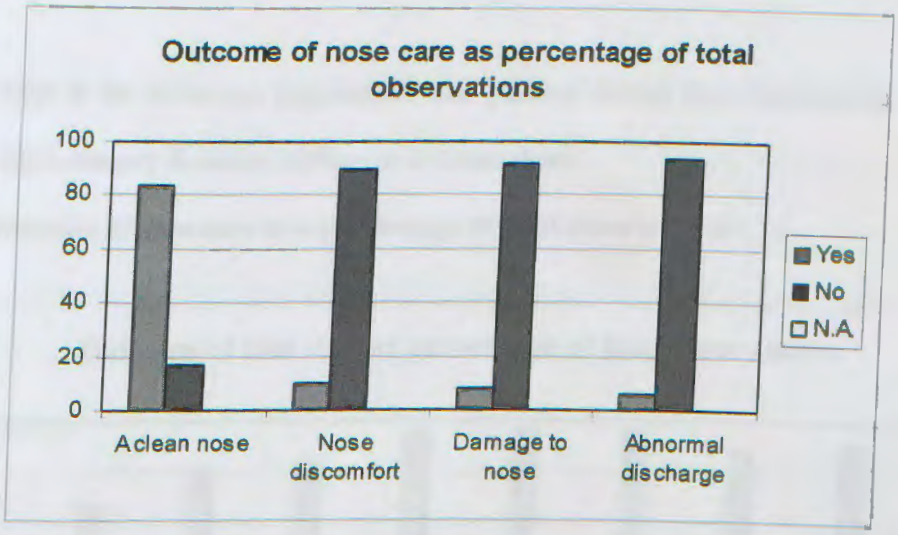
4.4.5 Nose care

The nose was observed with regard to the following:

- clean nose
- nose discomfort
- damage to nose
- abnormal discharge

During thirty six (17,1 %) of the observations, the nose was found not to be clean. This is an aesthetic issue because people in contact with the patient may avoid a patient due to this. It might also interfere with the olfactory (smell) sense.

Figure 4.6 Outcome of nose care as a percentage of total observations



4.4.6 Skin care

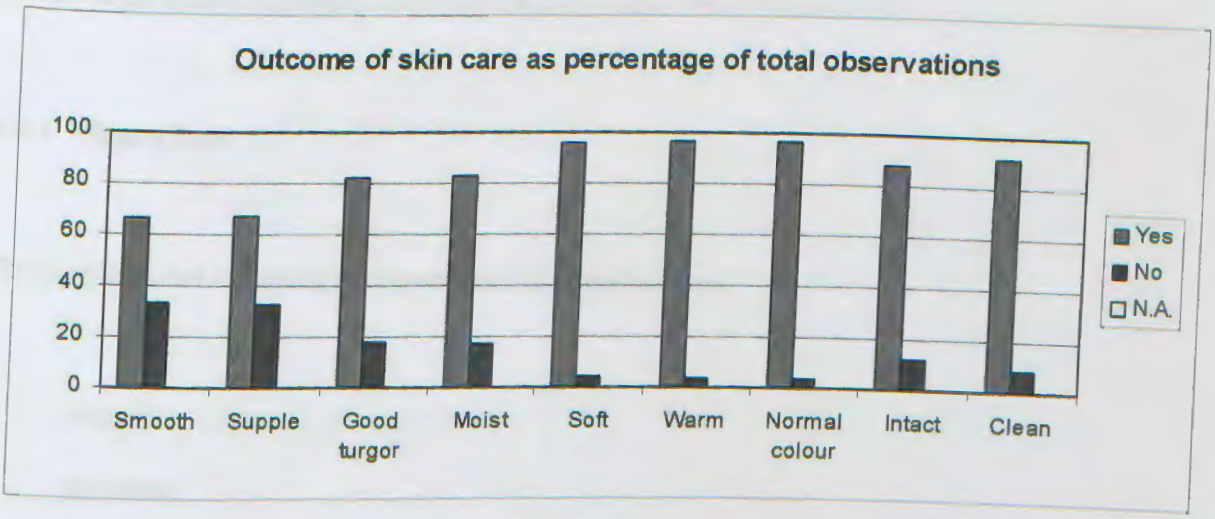
The skin was observed for the following:

- smooth
- supple
- good turgor
- moist
- soft
- warm
- normal colour

- intact
- clean

A daily bed-bath is the minimum requirement that patients expect from the nursing personnel, either to put the necessary facilities in place or to assist them.

Figure 4.7 Outcome of skin care as a percentage of total observations



All the patients in this study were dependent or semi-dependent on the assistance of the nurse. With one hundred and seventy five (83,3 %) observations, the patients indicated and it also appeared evident through observations that the patients had received a bed-bath. Despite the high percentage obtained, an acceptable norm would be closer to a 100% as a daily bed-bath is regarded as an absolute minimum requirement.

This apparent shortcoming in providing bed-baths to every patient each day may account for the high incidence where the skin did not appear to be smooth (see Figure 4.7). With daily bed-baths the assessment of the skin forms an integral part of the procedure.

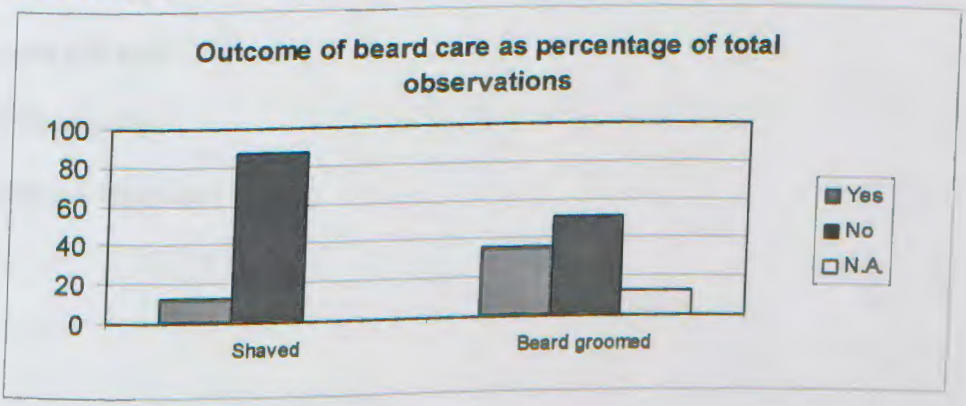
Wounds and surgical incisions that necessitated hospitalisation were not regarded as part of the evaluation of an intact skin. In the twenty patients (10 %) whose skins were not intact, their skin conditions were usually caused by walking bare feet. This is in line with traditions in the Kavango speaking people (Gordon, Larson & Mc Gurk; 1981:48-50)

4.4.7 Beard care

The patients were observed to see whether their beards were:

- shaved
- groomed

Figure 4.8 Outcome of beard care as a percentage of total observations



As can be seen in Figure 4.8, during 70 % of the time, the patients were not shaved, despite their willingness to be shaved.

This correlated with a previous study done by Van Dyk, Small, Ackermann and Haoses (1994). In this study, which mainly evaluated the intravenous care patients received, it was also noted that male patients were very seldom shaved.

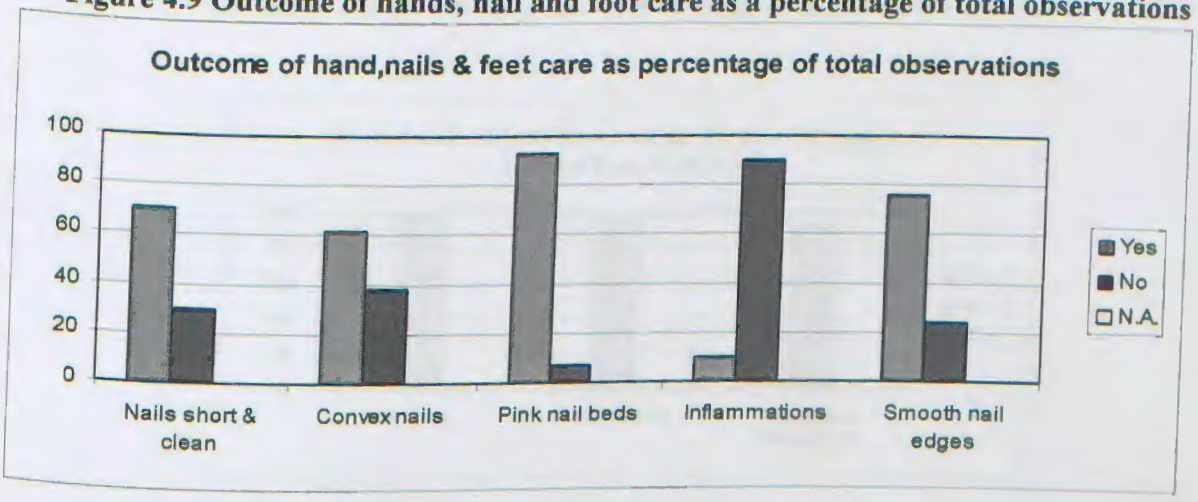
Patients' physical appearance is negatively influenced when unshaven, especially in the first two days. If patients are not accustomed to it, it may create a feeling not being "groomed".

4.4.8 Hands, nail and foot care

Observations were done with regard to:

- nails (short and clean)
- convex nails
- pink nail beds
- inflammation
- smooth nail edges

Figure 4.9 Outcome of hands, nail and foot care as a percentage of total observations



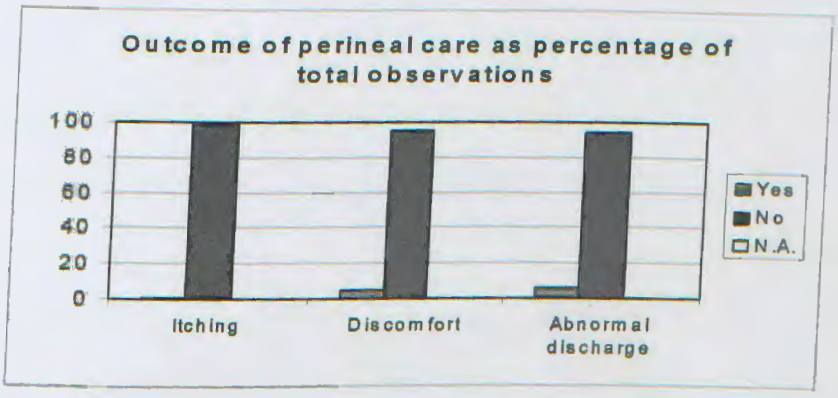
From Figure 4.9 it can be noted that 38,5 % of patients' nails were not convex. These observations were made in patients with full blown aids. Non-convex nails might be due to secondary infections of the heart and lungs, leading to a condition called chronic obstructive pulmonary disease (Vlok, 1988:619). The fact that most of the people in the Kavango region, especially elderly and children, walk bare feet, could be the contributing factor of inflammation as indicated in Figure 4.9.

4.4.9 Perineal care

During this part of the hygienic evaluation, observations were done with regard to:

- presence of itching
- signs of discomfort
- presence of abnormal discharge

Figure 4.10 Outcome of perineal care as a percentage of total observations



Although few abnormal observations were noted as can be seen in Figure 4.10, the researcher and research assistant did, however, notice the following:

- Perineal care was not done during the bed-bath.
- Nothing was recorded.

As the spread of micro-organisms to the bladder could easily result when hygienic care is sub-optimal, even the slightest deviation should be noted.

This is even more important due to the fact that many of these patients already have full blown Aids and their immune system is severely compromised.

4.5 APPROPRIATE NURSING ACTIONS TAKEN

These findings indicated that the hygienic care is not optimal. The following table, where the appropriateness of the nursing action is shown, confirms the above.

Figure 4.11 Appropriateness of nursing action

Appropriate nursing action depends on adequate record keeping. The above mentioned results were mostly obtained from patients records. If nothing was recoded, it was regarded as not being done. According to Searle a nurse betrays the relationship with her paitent when she is lax in maintaining records (Searle, 1991:86).

4.6 SUMMARY

Chapter Four was concerned with the analysis, presentation, interpretation and discussion of the findings. Some of the results were:

- Not all the patients' hair was found to be clean (72,9%).
- Some patients experienced eye discomfort (10 %).

- Some patients had hearing disturbances (7 %).
- Not all the patients' teeth were clean (60,4 %).
- Many patients suffered from halitosis (32 %).
- Male patients were not shaved (70 %).
- Many patients had abnormal nail configurations (38 5 %).

These findings indicated that the hygienic care is not optimal.

Chapter Five to follow will include an overview of the findings, conclusions, limitations and recommendations in relation to their implementation and implications of the study.

CHAPTER FIVE

REPORT ON THE FINDINGS, CONCLUSIONS, LIMITATIONS, IMPLICATIONS OF THE FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter includes a brief overview of the study with emphasis on major findings.

5.2 REPORT ON THE FINDINGS

Before the findings of this study can be stated, it is necessary to refer to the problem statement or leading research question as well as the main objective. A short summary of the research design, research instrument and population will also be provided.

5.2.1 Statement of the problem

In Chapter One (1.2) some negative concerns were discussed concerning the quality of nursing care regarding personal hygiene of patients admitted to a hospital in the Kavango region.

These negative concerns or issues were raised by the public over the radio. Comments were also found in the written media.

This was the stimulus for this research project.

5.2.2 Research question

In this study the leading research question was:

What is the quality of care with regard to the hygiene of patients admitted to a hospital in the Kavango region?

5.2.3 Objective of the study

The main objective of this study was to:

What is the current quality of basic nursing care specifically with regard to personal hygiene of patients in a hospital in the Kavango region.

5.2.4 Research design

The means of obtaining the desired information was by means of a descriptive survey and using a checklist which was developed by the researcher. The items on the checklist were formed and based on the objectives of the study and the specific information sought.

The conceptual framework where concepts of Henderson and the Scope of Practice of Registered Nurses was incorporated, was also used to put the items in perspective.

The instrument (checklist) was structured into two sections.

The first section contains biographic information and elicited information regarding gender and the age of the patients.

The second section contains items on hygiene.

The instrument was pretested. The reliability of the instrument was ensured by the fact that the patients who participated in the pretest (pilot study) had the same characteristics as the patients in the main study. Content validity was ensured by incorporating the conceptual framework and scrutinizing the literature. Five registered nurses were selected to estimate the content validity of the checklist on the basis of their experiences.

5.2.5 Population

In this study the population consisted of all the patients admitted to a hospital in the Kavango region for a period longer than seven days.

Thirty (30) patients met this criterion and they were all included in the study.

5.2.6 Process of data analysis

Descriptive statistics were used. Frequencies and percentages were presented. Data was presented in tables and bar graphs.

5.3 SUMMARY OF FINDINGS AND THE CONCLUSIONS

The summary of the findings and the conclusions addresses the following aspects (parts) of hygiene:

- hair care;
- eye care;
- ear care;
- mouth care;
- nose care;
- skin care;
- beard care;
- hands, nail and foot care; and
- perineal care.

5.3.1 Hair care

It was found that in one hundred and fifty three observations (72,9 %) that the patient's hair had been washed. It is also a fact that patients do not wash their hair every day, thus the hygienic aspect of hair seems acceptable.

5.3.2 Eye care

Overall the conjunctiva of the patients were clear. What was a concern, is the high incidence

of eye inflammation, namely thirty percent. This may be related to some of these patients compromised immune system.

What was distressing is the incomplete records. These eye inflammations were never recorded. Inflammation of the eye might be a minor ailment, but it could just as easily affect visual acuity.

The care of the eyes is therefore regarded as sub-optimum.

5.3.3 Ear care

In one hundred and seventy seven observations (82 %), the ears of the patients were found to be clean.

The care in this aspects therefore seems adequate.

There were, however, some abnormalities, especially hearing disturbances in seven percent of the patients.

These findings were not recorded in the patients' records.

Some patients, five percent, also experienced ear discomfort which was also not recorded.

Improper or deficient record-keeping is therefore contributing to sub-optimum hygienic care of the ears.

5.3.4 Mouth care

In only one hundred and twenty seven (60,4 %) of the total observations the patients' teeth were evaluated to be clean.

Ninety three (32%) of the observations, the patients were also evaluated as suffering from halitosis.

These findings indicate a sub-optimum (sub-standard) care with regard to mouth hygiene.

5.3.5 Nose care

It seemed that the patients' nose hygiene was of an acceptable standard. In only thirty six (17,1 %) of the observations were the patients' noses found not to be clean.

5.3.6 Skin care

During one hundred and seventy five (83,3 %) of the observations, the patients did receive a bed-bath.

An acceptable norm in this case would be closer to 100 %.

It therefore is regarded that the skin care is sub-optimum (sub-standard).

5.3.7 Beard care

Seventy percent of the male patients were not shaved. This presents a lack of care.

5.3.8 Hands, nail and foot care

Although inflammatory lesions were noticed, they appeared on the feet and were due to bare feet walking.

Patients with abnormal nail configuration do not always indicate abnormal hygienic conditions, but could also reflect on respiratory disorders. As no mention of this is made in the records, the conclusion is that hands, nails and feet care is not optimal.

5.3.9 Perineal care

The perineal area appeared to be free of itching, discomfort and abnormal discharge.

From the field notes of the researcher and research assistants, it becomes evident perineal care was not done during the bed-baths.

Thus, based on the findings, the perineal area may appear adequately cared for, but this may be due to the relative short stay in the hospital.

Thus, the researcher is of the opinion that perineal care is not optimal.

5.4 RECOMMENDATIONS TO IMPROVE THE QUALITY OF HYGIENIC CARE

5.4.1 In-service training (education)

Education is defined by Mellish & Brink (1996:76) as a process of leading the person being educated from a state of not knowing, to a state of knowing. It is a known fact that education has a purpose and aimed at goal achievement. In the nursing profession, nursing education takes place in the caring situation. As a result, basic nursing training should not be an end in itself, but continuous education is required. In this study, it is therefore recommended that all the categories of nurses should be subjected to in-service training such as workshop attendance, study tours, seminars and even to be motivated for further studies through fellowships. This will enable the nurses to make the correlation between theory and practice.

Nursing education will also enable the nurses to know their scope of practice as stipulated in the Nursing Act, Act No. 30 of 1993 for each category as described in Chapter Two. Awareness raising of the nurses concerning their scope of practice reinforces the nurses to become more responsible and accountable for their actions and missions.

Geoffrey & Wainwright (1994:146) make it clear that practice nurses should have a clearly defined professional structure behind them, which gives them certain degree of autonomy. It is therefore a prerequisite to develop nurses through in-service training in order to make them

more accountable for their actions. In this study it is strongly recommended that in-service training should be a priority.

A final recommendation with regard to education, is to instill a caring attitude/philosophy. It is the perception of the researcher that some of the inadequacies in hygienic care could be attributed to a lack of care. This recommendation is also a managerial issue. As Watson puts it: "The practice of caring is central to nursing" (Watson, 1985:9).

5.4.2 Recommendations related to management

To manage means to control (Mellish, Brink & Paton, 1998:4). The management part of patient care need to be strengthened. It was observed during this study that lack of supervision and guidance existed based on the following:

- Auditing of patient files was not done, and if so, no result was made available to the researcher. Consequently, nursing action taken could not be compared to the expected outcome. Thus, it is recommended that regular audits be done.

- Administrative and logistic staff was not supportive enough, because most often, medical and nursing forms were not available in stores. This gave the impression that stock control (stock level) was poorly done. It is therefore recommended that the logistic and nursing administrators should sit together to discuss the issue related to stock management and maintenance.

- It appeared to be that the number of nurses as provided by the staff establishment could not address the problem of staff requirement and staff complement. In view of the fact that the hospital becomes a referral, regional and intermediate hospital, which is catering for both regions in the north-eastern part of the country (Kavango and Caprivi regions) it is recommended that the number of staff could be re-evaluated. This is also due to the fact that the hospital falls under specialized or tertiary care, which needs different specialized nursing care. This problem could be addressed through motivation to the national level of additional posts on the staff establishment.

- It is also recommended that regular quality control meetings be held between nursing managers and registered nurses.

5.4.3 Recommendations for further research

Research is a rational process of scientific inquiry directed towards a question or a problem (Quinn, 1992:285). In order to address further problems in nursing care, it is recommended in this research that:

- Patient evaluations could be done before discharge so that they can indicate their perception of the quality of nursing given to them.

- A public relation officer could be appointed, made known to the public, to whom the members of the community could go with their queries related to health care issues. It is preferable that this officer should also be able to communicate in local language, so

that those who cannot express themselves in official language's problems could be addressed. It is also important for the liaison officer to be knowledgeable when it comes to cultural aspects as explained in Chapter One.

As this study was limited to one hospital, it is recommended that similar studies be done in all the hospitals in the Kavango region in particular, and all the hospitals in Namibia in general.

During this study, standards on personal hygiene was not formulated. It is therefore recommended that further studies should be conducted in which standards will be formulated.

Before presenting the final conclusion, the limitations of this study will be presented.

5.5 LIMITATIONS

5.5.1 Limitations with regard to the study population

For this study to be effective, it was expected to observe at least thirty (30) patients for a period of seven (7) days each. A limited number of patients qualified for a one week hospital stay. This is an endemic malaria area. If the malaria cases are not complicated, the patients may be admitted only for 3 - 4 days and then will be discharged. Most of the thirty (30) patients in the study were hemiplegic; AIDS and patients who had amputations. The data was collected in three (3) phases, based on the availability of patients who could stay for the required seven days in the hospital.

The study population was limited to only one hospital as the next nearest hospital is 120 km away from the researcher's residential place. The Kavango annual report 1999 indicate that the average length of stay in the hospital was 5.6 days.

5.5.2 Limitations related to the working environment

The political instability in Angola caused an extra burden on the workload of the nurses. All the war victims in Angola as well as in Namibia were referred to the regional hospital where the study was conducted. The nurses in particular and the health workers in general were psychologically affected. This in turn affected their performances.

5.6 SUMMARY

The aim of this study was to determine the quality of nursing care regarding personal hygiene of patients admitted to a hospital in the Kavango Region of Namibia.

The study was prompted by repeated media reports over the radio. Commentators and listeners expressed concern over the seemingly lack of adequate hygienic measures, specifically with regard to patient care.

To objectively quantify and describe the extent of this problem, a single objective was stated, namely to measure the quality of nursing care with regard to patient hygiene. A descriptive survey design was chosen to explore and describe the problem. A check-list was developed to observe thirty patients (the total population) over a period of one week.

The results indicated that certain aspects (parts) of hygienic care needed improvement. These aspects (parts) were:

- the care of male patients' beards;
- perineal care; and
- mouth care

Other aspects of care were indirectly negatively influenced due to incomplete recordkeeping.

On completion of the study recommendations were made with regard to:

- in-service education;
- management; and
- research

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ANNEXURE A

Ministry of Health and Social Services
North East Health Region
Private Bag 2094
RUNDU

04 June 1999

Acting Medical Superintendent
Rundu State Hospital
Private Bag 2094
RUNDU

RE: AUTHORISATION FOR CONDUCTING A STUDY/SURVEY ON THE QUALITY OF NURSING CARE REGARDING THE PERSONAL HYGIENE OF PATIENTS ADMITTED TO RUNDU HOSPITAL:

I am a distance education student, at the University of Namibia. My interest is to determine the quality of nursing care regarding the personal hygiene of patients admitted to the hospital in Kavango Region.

One of the requirements of this course is to conduct a survey. This will enable me to complete my study in order to obtain a Degree: Masters in Nursing Science, Nursing Management. The study will contribute to the improvement of the quality of nursing care in the Region.

For this reason, I would like to obtain permission from you, to conduct (the research) as required by the University of Namibia. Attached please find the letter from the Dean of the Faculty: Medical and Health Science. For any queries, please contact Professor A. van Dyk, Tel. No. 20638270.

Your good and kind understanding will be highly appreciated.

Yours faithfully

.....
M.K. MUYEU

9-0/0001

Republic of Namibia

Ministry of Health and Social Services

NORTH EAST HEALTH DIRCETORATE
PRIVATE BAG 2094
RUNDU

To: Mrs. M. Muyeu
Chief Regional Nursing Officer
Kavango Region

From: The Office of the Acting Medical Superintendent
Rundu Hospital

Date: 04 June 1999

RE: AUTHORIZATION FOR CONDUCTING A STUDY/SURVEY ON THE QUALITY OF NURSING CARE REGARDING THE PERSONAL HYGIENE OF PATIENTS ADMITTED TO RUNDU HOSPITAL:

It is hereby to grant the permission to Mrs. Muyeu for the study to be conducted in Rundu Hospital, which will also contribute to the improvement of the quality of nursing care in this Region.

Thanks also for your good support.

Your faithfully

.....
DR. MERCEDES CREMATA
ACTING MEDICAL SUPERINTENDENT
RUNDU STATE HOSPITAL

MINISTRY OF HEALTH AND SOCIAL SERVICES
1999 -06- 7
REGIONAL OFFICE NE
REPUBLIC OF NAMIBIA

Forward with Health for all Namibians by the Year 2000

ANNEXURE C

CHECKLIST OF NURSING CARE

Section One
Patient Number

Male: ☐ **Female:** ☐ **Child:** ☐

Date of admission:
Observer
Period of observation

eg: if the skin is smooth put a X in the Yes column

Description and findings:

Section Two

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Hair Car	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**Na**	**yes**	**no**	**na**
1. Daily/weekly hair washed																								
2. Condition of hair/scalp recorded																								
Clean																								
Shiny																								
Combed																								
Plaited																								
Lesions on scalp																								
Lice																								
3. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Eye Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Condition of eyes recorded																								
Conjunctiva clean																								
Eye inflammation																								
Watery eyes																								
Eye discomfort																								
Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Ear Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Condition of ears recorded																								
Clean ears																								
Excessive ear wax																								
Ear discomfort																								
Hearing disturbance																								
Damage to the ears																								
Abnormal discharge																								
2. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Mouth Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**Yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Mouth care done twice a day / 4																								
2. Condition of mouth recorded::																								
Clean																								
Oral discomfort																								
Smooth and hydrated oral mucosa																								
Inflammation of the oral mucosa																								
Intact oral mucosa																								
Normal colour of oral mucosa																								
Halitosis																								
Clean dentures																								
3. Appropriate nursing cation taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Nose Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Condition of nose recorded:																								
A clean nose																								
Nose discomfort																								
Damage to nose																								
Abnormal discharge																								
2. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Beard Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Condition of beard recorded:																								
Shaved																								
Beard groomed																								
2. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Skin Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Daily bed-wash done																								
2. Back and pressure parts done																								
3. Two hourly turning done																								
4. Patient mobilized in chair																								
5. Condition of the skin recorded:																								
Smooth																								
Supple																								
Good turgor																								
Moist																								
Soft																								
Warm																								
Normal colour																								
Intact																								
Clean																								
6. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Hands, nail and foot care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
Condition of hands, nails and feet																								
Nails short & clean																								
Convex nails																								
Pink nail beds																								
Inflammations																								
Smooth nail edges																								
2. Appropriate nursing action taken																								

Comments

	Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Total		
Perineal Care	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**	**yes**	**no**	**na**
1. Perineal care done together with																								
2. Abnormalities recorded:																								
Itching																								
Discomfort																								
Abnormal discharge																								
3. Appropriate nursing action taken																								

Comments

DESCRIPTION OF THE KAVANGO REGION

The Kavango region, known until December 1999 as Okavango region, is a large and densely populated area located in the north eastern part of Namibia. It comprises the existing magisterial district known as Kavango. To the north, the whole region except for a small western corner is bordered by the international boundary with Angola following the mainstream of the Okavango River. To the east, the Caprivi region and the international boundary with Botswana border the region. To the south, the Otjozondjupa region and to the west the Otjikoto region form boundaries.

The region gained strategic importance because of its location next to Angola and Botswana, the linking of Namibia with countries like Zambia and Zimbabwe by means of the Trans-Caprivi highway and because of the region's apparent agricultural potential.

Recently, before the council elections (December 1998), the regional and the constituency boundary have changed. At present there are seven constituencies in this region, namely, Mpungu, Kagenge, Kapako, Rundu Urban and Rundu Rural, Mahare, Ndiyona and Mukwe. It covers a surface area of 43.417 square kilometres and has a perimeter of 1,005 kilomertres. Rundu is the main cnetre but there are 61 villages and small settlement spread across the region. Rundu forms a natural centre for the region and accommodates the directorate and regional health offices.

Population

The region is characterised by the uneven distribution of the population and is blessed with a good rainfall as well as the perennial flow of the Okavango River. More than 80 % of the people live along the river while the remote areas of the region are almost unpopulated due to the war in the previous colonial era. Although the region has received some attention since independence in 1990, it is still in serious need of many services and improvement of basic infrastructure of which rural water supply, road improvement, telecommunication, radio communication and electricity are the most important. At present the region's isolation from the rest of Namibia, couples with traditional linkages to Angola and Botswana, result in a high degree of cross border interaction and trade with those countries.

The total population of the region is 143.933 people with population growth of 3 %, the size of the region si 43,417 km^2.

Climatology

Climatological data is received from one weather station located in Rundu. The climate of the region can be described as mild arid to sub-arid with hot summers and cool to warm winters.

The annual mean temperature is 31.1 °C for the summer months. The highest temperatures are recorded during the spring time with a mean maximum temperature of 33 °C. The mean daily humidity figures are also lowest during the spring time (41.3 %) and the mean monthly evaporation rate is 263.5 mm.

Economic development and trends

Roads: The roads are mainly gravel and in poor condition, they also create large amounts of dust. The only tarred road is from Rundu to Windhoek and from Rundu to the boarder between Kavango and Caprivi in the east. The road system is underdeveloped, particularly in the rural areas, and needs improvements. Especially the road from Nankudu to Rundu (the western part of the region) claims lives regularly as a result of many accidents. Also the Ministry of Health and Social Services spends large amounts of money on maintenance of their transport.

Electricity: Perhaps the most significant development that has taken place in Namibia since independence is the rural electrification programme carried out by NAMPOWER. This programme was made possible through contribution by the Namibian Government and the international community. The power network in the region consists of a 132KV line from Grootfontein to Rundu.

Most of the clinics are not supplied with electricity, while some health centres are connected to the main supply. Two clinics are supplied with solar power.

Postal services and communication: NamPost and Telecom are responsible for the provision of postal and telecommunication services in the region. The whole region is served by only one post office at Rundu and five collecting points along the river. Communication with clinics within the region is problematic. Some clinics cannot be reached through radio and there is a need to install a radio communication system to all health facilities. This year

Telecom has installed telephone booths in many places along the river and the main road to Windhoek.

Industry: The region does not have much industries, recently a brewery has started operating, there is a slaughterhouse, but mainly the developments are in small business such as shops and other service providing activities. Employment is difficult to find and many school leavers are without anything to do.

Social developments and trends

Education: There are 237 schools in the region. Some are traditional structures, built with sticks and mud. According to the study done by IDC in 1995, 15 % are traditional structures and 8 % are outdoor spaces. The highest proportion of buildings are permanent (77 %).

Most of the schools lack basic facilities. Eighty two percent (82 %) have no toilet, 53 % have no water supply, 88 % have no electricity and 92 % lack telephones.

Total primary schools	228
Total secondary schools	9

The illiteracy rate in the region for females stands at 42 %. This is much higher than the rate for males (30 %). The national level of illiteracy stands at 38 %. In Rundu there is a Vocational Training Institute (1992) and a Teacher Training College.

There is an urgent need to upgrade existing facilities in schools and to provide new classrooms and services. The high population growth will place additional pressure on these facilities.

Employment: As already mentioned before, unemployment is very high among school leavers. Other major problems are teenage pregnancy, alcohol abuse, rape, violence, child abuse and street kids. The street kids in Rundu are in general sleeping at home and looked after by the Red Cross Society during the day.

Alcohol consumption is increasing in the entire region and this leads to broken families. The fear for AIDS is also contributing to this problem. Churches are the driving force behind community activities.

Food supply situation: The rainy season for 98/99 was reported as "fairly good". In rid January through most of the maize and other nutrients plants got burned. The food supply was reasonable in terms of mahangu but some damage was caused by birds, insects and elephants. The drought relief programme was implemented but due to inadequate supply of food commodities not all the villates were covered. Those villages hardest hit were prioritised and 80 % of families received food rations.

Sever malnutrition was diagnosed 178 cases which was 2,4 % of all in-patients children and ranked 8th in the top 12 diagnosis. There were 52 reported cases of pellagra or night blindness.

Environment: Kavango region is an entirely rural environment, with Rundu as the only sizeable population centre with its associated commercial premises and light industry. Outside Rundu and the large villages, the main environmental hazards to Kavango residents are those associated with practices of agriculture and fishing.

Air: There were no reported incidents of serious air pollution which is probably a reflection on the lack of industrial processes. However, the traditional burning of vegetation during the dry season for agricultural purposes may have an impact on air quality, but at present this cannot be quantifies.

Soil/waste disposal: In the rural areas the traditional method of solid waste disposal is to put refuse directly into holes dug in the ground. Within Rundu this practice still continues to some extent in the informal settlements. A perennial problem in Kavango was caused by the inadequately planned dumping sites. This was an unfenced area surrounded by informal housing where all the waste from commercial and household was disposed of.

Fortunately the region was included in a clean up campaign initiated by Central Government and funding was made available to open a new fenced dump site outside the town. In addition the old site was covered over, litter bins were provided in the twon centre and in the informal areas and people were employed for a litter pick up campaign.

It remains to be seen how clean Rundu will remain as no large scale education campaign was provided at the same time.

This had been recommended to the town council by the health inspector as essential for changing behaviour and preventing littering. Clinical waste at some hospital is incinerated, but the remaining hospitals, health centres and clinics have to rely on burial methods.

Pest control: Apart from the problems posed by mosquitoes, the Environmental Health Services dealt with a number of requests to spray for pests.

Chemical safety: There were no reported incidents of pollution or disease due to chemical contamination.

Water supply and sanitation: The parastatal body responsible for water supply, NAMWATER, defines the water in the Kavango River as Class C which is drinkable. After sand filtration and chlorination it is improved to Class A which they classify as excellent. In the last year there were no incidents of serious water pollution reported. Bacteriological failures detected by Namwater's own monitoring were passed on to the health inspector and quickly dealt with by Namwater personnel. The only major problem occurred at some villages where the bore-hole ran dry, but this was later restored after further drilling.

All of the bore-holes and reservoirs maintained by NAMWATER are protected sources.

Life styles and risks

Over the last few years Rundu town has expanded rapidly, including the number of people living in town.

A STICK A DAY KEEPS THE DENTIST AWAY

The ancient African custom of cleaning the teeth with a chewing stick works as well as the modern toothbrush. This could partly explain why the practice is still so common: a 1993 survey in Namibia discovered that one in five Namibians used chewing sticks. This group had fewer cavities on an average than toothbrush users.

The chewing stick, which had been in use for centuries in the Middle East, India, Africa and Asia, has proven to contain bio-active chemicals that inhibit oral pathogens in much the same way as popular over-the-counter mouthwashes.

In rural Namibia the plant of choice is the Mathala shrub, which is found across most of the country. Slender cuttings are taken from the roots or stems, cleaned, and sold in bundles in the village markets. Once bought the sticks to massage their gums and clean their teeth, paintbrush. Local people use these buffered sticks to massage their gums and clean their teeth.

The Mathala plant, *Diospyros lycioides*, was reputed to have medicinal properties and researchers began to wonder if anti-microbial compounds in the plant were specifically targeting oral diseases. This question inspired Professor Christine Wu of the University of Illinois at Chicago and Professor Pieter van der Bijl of Stellenbosch University Medical School to embark on a collaborative study.

Kilograms of Mathala twigs were collected in the villages of Namibia and transported to Tygerberg Hospital in Cape Town, South Africa. There a methanol extract of the Mathala plant was obtained and sent to a high-tech chemical laboratory in Chicago. The chewing stick, perhaps the simplest of all tools, required chemistry's most advanced gadgetry to uncover its secrets.

Analysis revealed that the extract significantly inhibits oral bacteria. The chemistry of the extract closely resembles that of the popular mouthwash, Listerine.

Altogether six anti-microbial compounds were isolated. The most potent bacteria-killer was juglone, also found in black walnuts. Four of the compounds, dubbed diospyrosides, had never before been observed and recorded by chemists.

Case closed one might think - nature's gift of anti-plaque agents in the Mathala plant must explain the remarkable teeth of Namibian chewing stick users. But scientific observers hesitate to draw that conclusion. Other factors are implicated in the condition of our teeth - in particular levels of fluoride in the water, diet and physical cleanliness.

According to Professor Van der Bijl, the removal of food particles with toothbrushes preserves out teeth more effectively than the agency of any toothpaste. Similarly it may be the chewing stick's physical dislodgement of food deposits that prevents tooth decay and not the recently discovered compounds.

Furthermore, there is generally a rural-urban diet divided in Africa. The sugary and processed foods eaten by city dwellers contrast with the simple palate of villagers.

There is evidence that the newly urbanised and the rich in Africa have more cavities than the rural poor. Chewing stick users are predominantly rural dwellers and their cavity-free teeth could be due to a better dental diet.

Remarkably, the relationship between social class and tooth decay in inverted in the first world where the poor are plagued by more cavities.

As is so often the case in the health sciences, it is difficult to pick apart the different strands of reality that are woven into our bodies. Wu and Van der Bijl agree that there is currently little evidence that chewing sticks secrete enough of their chemicals into the mouth to be beneficial in biochemical terms.

What is certain is that chewing sticks offer an economical and effective toothbrush alternative for the poor of the developing world. So compelling is this evidence that the World Health Organisation has long been running an advocacy programme to encourage people to chew sticks on a daily basis.

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