The oral health status and perceived oral health needs in older adults in Guguletu

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Dedication

This work is dedicated to my family: my husband Edwin, my son Brian, and last but not least my parents Coelestina and Fulgence for their love and support.

Declaration

I declare that this study on the oral health status and perceived oral health needs in older adults in Guguletu is my own work and that all sources I have used and quoted have been indicated and acknowledged by means of completed references.

Signed: .....

K. J. Kazaura

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ABSTRACT

Objectives: Previous studies have indicated that most of the older adult population has poor oral health but only a few of them demand care for their problems. The reason for this discrepancy has never been explained adequately. The objectives of the study were, first, to assess the perceived oral health needs (with regards to social, functional and psychological impacts of oral diseases) of older adults aged 55 years and above, second, to assess the oral health status (periodontal disease, dental caries and oral mucosal lesions) in an adult population aged 55 years and above.Third, compare the relationship between normative and perceived need.

Methods: This was a quantitative cross-sectional, descriptive study and consisted of 100 older adults who were randomly selected from three areas in Guguletu. These areas included the home for the aged Ekumphumleni, NY1 and NY2 clinics. Participants aged 55 years and above were interviewed using a structured questionnaire consisting of 32 questions and a clinical examination done. Frequency tables were computed and analysed. The relationship between variables like oral health status, perceived need and a variety of socio-demographic variables and measures of psycho-social impact of oral diseases were analysed by using the chi square test and odds ratio.

Results: The ability to perceive that they had a problem and the recency of the last visit to the dentist was associated with perceived need for dental care. There was a significant relationship between the presence of symptoms which were painful and perceived need for dental care (mouth, p value=0.015; gums, pvalue=0.001; teeth, p value=0.0006) The positive attitude towards dental care and regular dental hygiene was an indicator of positive attitudes towards oral health care. In this study a substantial difference between perceived and normative need was also observed. 88% of the respondents perceived a need for dental care and 99% were assessed as needing treatment (normative need) but only 29% demanded the care. 63% were dissatisfied with their functional ability to chew and expressed a need for dentures.

Conclusion: The aim of this study was to assess the oral health status and perceived oral health needs among older adults in Guguletu. The oral health status was poor in most of the

participants and the demand for care was low even though perceived need was high. The study has shown that social, functional and psychological factors influence the demand for care in this adult population. The cost for dental care and access to these services are major barriers to the demand of care.Perceived oral health needs and the impact of oral diseases are important influences in the assessment of oral health needs in the elderly. The assessment of oral health needs as perceived by the elderly facilitates the planning and implementation of dental services with special consideration on the cost and accessibility of oral health care.

Key words: Older adults; perceived need; normative need; psycho-social impact; oral health.

Chapter 1

GENERAL INTRODUCTION

During the last few years there has been an increase in the awareness of oral health needs in older adults in the developed countries (Angelillo et al, 1990; Cohen and Gift, 1995; Ettinger, 1997). This may be due to the increase in life expectancy, that is, the number of men and women living beyond 65 years. The population trends in South Africa are similar to those in the developed countries, where there is an increase in the older adult population. The national population projections done in 1980 estimated that by the year 2030, South Africa will have six million old people (Population census, 1980).

In view of this increase in the old adult population more emphasis should be directed at the provision of better oral health services to this group of people. This has been recognised in the developed world but not in the developing countries. For many years the dental profession has overlooked the old people and concentrated on the young in an effort to protect and preserve the natural dentition (Ettinger, 1997). The neglect has resulted in the majority of the elderly being edentulous and the prevalence of oral diseases in this age group increasing (Angelillo et al, 1990; Claude, Beck and Strauss, 1990). The older adult population in the industrialized world was recognised recently and more attention has been paid to their oral health problems.

Indeed, this should also be the trend in South Africa where the elderly population is increasing, but oral health care to this group of people is neglected in favour of the younger population due to the scarcity in resources (Morrish and Schaffer, 1992). In view of this deficiency in the provision of oral care to this group, this study is undertaken to determine the perceived oral health needs of the old adult population in Guguletu.

Guguletu is a township in Cape Town with a population of 75,597 according to the 1985 census. This area is predominantly black populated, with a community centre for the aged (Ekumphuleni). The Guguletu dental clinic is the only clinic providing dental care for the Guguletu population. With the increase in the older adult population, there is also an increase in the prevalence of oral diseases in this age group. The problems become more complex to manage and the quality of life of an elderly person can be dramatically affected by the oral

diseases. Hence there is a need to assess the oral health needs of this age group so as to be able to provide better oral health care, with consideration to the scarce resources available. This study will enable planners and oral health workers to get a more realistic picture of what is required by this age group and to formulate recommendations to effect meaningful changes to the present situation of health care in the elderly population.

Chapter 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter reviews the ageing process and the psychological and social impact of oral diseases in the elderly. It also analyses the different types of need assessment and the use of socio-dental indicators in measuring the impact of these oral diseases.

2.2 Ageing and the impact of oral diseases among older adults

Oral health is crucial to an individual's quality of life. Oral diseases have been associated with poor nutrition, general health and psycho-social problems. These include problems in chewing, tasting and swallowing which can affect the type and quantity of food consumed by older people (Dolan and Atchison, 1993). In simple terms, optimum oral health includes the ability to chew and eat a full range of foods, ability to speak clearly, to have a socially acceptable smile and dento- facial profile, to be comfortable and free from pain and, lastly, to have a fresh breath.

Warren and Blandford (1985) described ageing as the process which results from the interaction of genetic endowment, environmental factors, and psychological and social development. It is also a biological process that is affected by lifestyles, level of education, nutrition, selfcare, socio-economic status and family relationships. This process is associated with various oral and general health problems. Associations have been demonstrated by researchers on the psychological well being and self esteem of older adults in view of the impact of these oral diseases. Reports on the general health effects on oral health include the association of diabetes with periodontal diseases and root caries (Shay and Ship, 1995).

Sheiham (1990), Tennsteadt et al (1994), and Slade and Spencer (1994) have described the ageing of any population as having a profound political, economic and social significance. Adjustments therefore have to be made to services, attitudes and the social environment. They report a demand for oral health services that rises with advancing age due to the fact that the elderly are retaining more of their natural dentition and experiencing increasing rates of dental

diseases. It is indeed time for the current health policy to include the treatment of oral diseases and maintenance of good oral health in the older adult population together with the treatment of other diseases affecting the remaining parts of the body.

Oral symptoms and their effects on well being and quality of life provide an indication of the social impact of oral diseases and can be used to document the burden of illness within the old adult population (Slade and Spencer, 1994). The impacts include difficulty in chewing, discomfort during eating, avoidance of foods, pain and other functional limitations. Impacts on social roles and interpersonal relationships are prominent. However many authors have documented that edentulous people experience social impact more frequently, particularly in areas related to chewing, eating and speech (Spencer, 1994 and Strayer, 1995; Slade).

2.3 Health needs assessment

The concept of need is at the core of health planning and planning health services is in turn rooted in the appropriate use of resources (Sheiham and Spencer, 1997). Need describes the state of the client that creates a requirement for care and therefore represents a potential for service (Donabedian, 1973). Need does not always result in the use of services, due to a number of barriers such as cost, availability of services, accessibility, fear of dental treatment, low educational levels and dependency in old age. Use of services does not always result from need, but the existence of a normatively defined need does create a potential for the use of services.

Normative need is that type of need which is clinically assessed by the professional, this type of need assessment is essential for measuring diseases, but not for measuring the needs of a population. Therefore a measure of health need should incorporate not only the clinical assessment but the psychological and social dimensions because the presence of a clinical impairment alone is neither a necessary nor sufficient basis for need (Sheiham and Spencer, 1997).

Oral diseases are largely social and behavioural in origin and almost entirely preventable by social and behavioural means (Cushing, Sheiham and Maizels, 1986). Hence the assessment of

oral health needs clinically will be greatly improved by adding a dimension of social impact (Cohen & Jago, 1976).

The measurement of oral diseases is essential for a full scientific understanding of the scope of oral health problems, rational decision making and evaluation of oral health services (Nikias 1985).

There is now an increasing demand that oral health measurement should encompass the broader implications of oral conditions that are relevant to policy makers and planners of oral health services. Clinical indices are essential in measuring the extent and prevalence of oral diseases, but the problems with these indices arise when they are used as measures of health and treatment need (Sheiham, Maizels and Cushing, 1982). For example, the loss of all molars does not necessarily mean there is need for dental treatment, although it is an impairment. But a person in this situation might be content with the number of teeth remaining and he or she can still perform a lot of functions with the remaining teeth. The need for dental treatment becomes debatable in a situation like this.

2.4 Use of health need assessment in oral health care

Health need assessment has been used in planning oral health care for a long time but the emphasis has been on the normative perspective of health needs. But there is a clear need to combine the clinical assessment of needs with the subjectively assessed need, which includes the social and psychological factors of ill health in assessing health needs.

The process of health needs assessment in planning oral health services was reported by White and Henderson (1976) to assist with:

a) Investigating the natural history and consequences of a disease

b) Assessing the burden of illness and health care needs of communities and populations.

c) Determining health goals, objectives and priorities.

d) Allocating and managing health care resources.

e) Assessing intervention strategies and evaluation.

2.5 Socio -dental indicators

These are indicators that assess the impact of oral disorders, clinical status, perceived and effective need as well as the ability to benefit from treatment (Adulyanon and Sheiham, 1998).

Cushing et al (1986) developed socio-dental indicators by assessing the impact of dental status on perceptions of people. The impacts were categorized as function (difficulty in eating), social interaction (difficulty in communication), comfort and well being (pain and discomfort) and self image (dissatisfaction with aesthetics).

The development of indicators based on the concept of impairment, disability and handicap was done by Slade and Spencer (1994) with the OHIP (oral health impact profile) this was the first indicator to use a scaled index of the social impact of oral disorders. The OIDP (oral impact on daily performance) which was developed by Sheiham and Spencer (1997) is a shortened version of the rest of the indicators. The indicators that impact on daily performance include pain, discomfort, functional limitation and dissatisfaction. The other levels of indicator measure impact on the physical, psychological and social performances.

2.6 Epidemiologic studies

In the following section, the literature on oral health needs (perceived and normative) will be reviewed before assessing the literature on the prevalence of oral diseases, including periodontal diseases, dental caries, edentulism and oral mucosa lesions.

2.6.1 Oral health needs

The assessment of health needs is contentious, because there are different imperatives influencing the relationship between needs and the provision of health care (Sheiham and Spencer, 1997). Planning for oral health care personnel and allocation of resources, depends on the existence of adequate information about the oral health needs of the population (Gilbert et al, 1989). It is essential to determine the need for oral health care in the older adult population, as perceived by the group, on what they think they need. This will enable the provision of comprehensive oral health care in relation to their perceived oral health needs to be more effective.

South African studies on the oral health status of older adults and need for dental treatment have been few. Their main focus was to assess the oral health problems and determine the normative need (professionally assessed need) to plan for oral health services and allocation of

resources (Van Wyk, Farman, Staz, 1977; Watermeyer, Thomas and Van Wyk, 1981). This professionally assessed need (normative need) continues to fail in the delivery system of oral health care (Green, 1994; Sheiham and Spencer, 1997) as many older adults do not utilize the health services despite the prevalence of oral disease in this age group (Grabowski and Bertram, 1975; Schou et al, 1989; Cohen and Gift, 1995). Although it is the most used type of need assessment in dental health care planning, it appears to be relevant to the disease oriented biomedical model, which is believed to identify disease without considering the perceptions of the patient (Sheiham and Spencer, 1997).

The normative need assessment is dominated by the professional clinical gaze, lacks objectivity, is not accurate and gives no sense of how people perceive the disease, and whether they consider themselves ill (Sheiham and Spencer, 1997). Traditional methods of assessing need were concerned mainly with technical disease-oriented questions of assessing need. The current concept of knowledge concentrates on the ability to benefit in terms of effectiveness and acceptability of the cure or treatment (Matthew, 1971). There is considerable variation in the professional definition of dental needs (Bradshaw, 1972; Cooper, 1975; Spencer, 1980). The common element in these various approaches is that all of them attempt to provide a definition of a need based on an objective clinical assessment by the professional. However, this approach is limited since the perceptions of the potential patient are not part of the consideration.

In view of these shortcomings, alternative approaches to dental needs were constructed by Sheiham et al (1982). This approach took the potential patient into account and depends on the individual's perceptions of dental needs, the oral health status and understanding what is the normal and possible benefit.

Evidence from medical literature suggests that an individual's evaluation of their personal health is often different from the objectively measured health status (Sheiham and Spencer, 1997).This missing link of variables consisting of measures of functional, social and psychological impact of oral conditions in more recently published studies, has indicated that these factors are often the stronger predictors of self- perceived need for dental care.

2.6.2 Perceived needs

There are few studies in South Africa that report on the perceived needs of older adults. Most of these have assessed the normative need as assessed by the professional (Van Wyk et al, 1977; Watermeyer et al, 1981). These studies revealed that the majority of older adults are edentulous as a result of periodontal disease, dental caries and dental extractions. Despite the prevalence of oral diseases the demand for dental care is low in this age group. This can be attributed to the fact that the perceived need for dental care in older adults is consistently and appreciably lower than the normative need or professionally assessed need (Wilson, Salway and Mclaughlin, 1987; Gilbert et al, 1989; Sheiham, 1990; Claude et al, 1990; Schou and Eadie, 1991; Dolan and Atchison, 1993; Ettinger, 1997;).

Kandelman and Lepage (1982) found that the criteria used by older adults to evaluate their oral and dental status were less demanding than those used by health professionals, and it was concluded that this difference in criteria had an impact on the demand for dental care. This implies that there is lack of knowledge about dental health, reduced access to dental care and other economic factors. Therefore the need for dental care as perceived by older adults has been identified as an important predictor for dental care attendance (Claude et al, 1990; Gilbert et al, 1994 and Ettinger, 1997).

Studies done in the United States of America by Wilson et al (1987) on 500 community-dwelling elderly found that age per se was not a good predictor of perceived needs or the use of dental services. The presence of teeth was a better predictor of perceived need than the usually reported factors of income and education (Gilbert et al, 1994; Ettinger, 1997). Also patients may place more importance on oral symptoms or the functional and psychological impacts of oral disease when assessing their need for dental care, rather than visible signs of oral diseases (Sheiham and Spencer, 1997).

Gilbert et al (1989) studied the perceived needs for dental care in adults age 20 to 64 years, in South Africa. The criteria for perceived need was based on responses given to the following questions a) Is there anything wrong with your teeth, gums or mouth at present? b) Do you intend visiting a dentist/ dental clinic in the near future? They found that perceived needs

differed in different population groups, the highest perceived need was in the African population (63%), followed by the Coloureds (54%), Asians (48%) and the lowest was expressed by the White population (27%). When perceived need was compared with the professionally assessed need, the latter was high for each population group.

2.6.3 PREVALENCE OF ORAL DISEASES

2.6.3.1 Periodontal disease

Plaque is the principal aetiological factor in virtually all forms of periodontal disease. Periodontal damage is due to the direct result of infection of the gingival sulcus by organisms within dental plaque. However, the progression from gingivitis to periodontitis is far more complex, as it involves host defence, the oral environment, the pathogenicity of organisms and plaque maturity (Mitchell and Mitchell, 1994).

The epidemiological studies done in South Africa on periodontal diseases in the elderly are limited (Van Wyk et al, 1977; Watermeyer et al, 1981). Many such studies have been done in the developed countries. (Schou et al, 1989; Murray, Harvey and Williams, 1991; Miyazaki, 1991; Jokstad, Ambjornsen and Eide, 1996;). The results from these studies indicated poor oral hygiene, high levels of plaque and calculus and high prevalence of gingivitis in the dentate subjects. Some studies indicated that oral hygiene deteriorates with age (Schou et al, 1989; Angelillo et al, 1990).

Sheiham and Spencer (1997) reported that the majority of inflamed periodontal sites do not progress to severe loss of attachment. The CPITN and its precursors, the periodontal treatment need index (Bellini, 1974) were developed when the natural history of periodontal disease was believed to follow an inexorable progression from marginal gingival inflammation to periodontitis to tooth loss. There is evidence to show that not all gingival inflammation conditions progress to periodontitis. This is reported in a study done by Gilbert et al (1989) in South Africa where high levels of plaque and gingivitis were present in a group of adults but there was very little evidence of periodontal destruction. Sixty percent of the surfaces exhibited bleeding on probing, but only 9% had pocket depths greater than 4 mm.

High levels of gingivitis in a Japanese elderly population were attributed to the long term effects of poor oral hygiene. In general the periodontal conditions are thought to deteriorate slowly with an increase in age, possibly leading to a disease level that threatens tooth life around the ages of 60 years and over (Miyazaki et al, 1991). Also the percentage of tooth surfaces with plaque, increases with age and in many epidemiological studies the close association of periodontitis, plaque, calculus and age have been shown (Van Wyk et al, 1977; Schou et al, 1989; Van; Kalk et al, 1992).

The trend of periodontal disease in the elderly in developed countries is similar to that in South Africa as it was reported by Van Wyk et al (1977) in a study done on Cape coloureds. In many of the studies reviewed, most of the elderly have high calculus scores and moderate to advanced periodontal disease (Murray et al, 1991; Miyazaki et al 1991; Galan, Brecx and Heath, 1995). Oral hygiene was a very sensitive issue, in a study done by Schou et al (1989). The subjects felt that they cared for their teeth and dentures sufficiently well and hence there was no need for knowledge on how to clean teeth or dentures.

2.6.3.2 Dental caries

Dental caries has been defined as a localised destruction of the teeth. It is a dynamic process characterised by episodic demineralization and remineralization occurring over time. Acid is produced as a by-product of metabolism of dietary carbohydrates by plaque bacteria, which result in a drop in the pH at the tooth surface. In response calcium and phosphate ions diffuse out of enamel resulting in demineralization. If this continues, disintegration of the mineral component will occur, leading to cavitation (Mitchell and Mitchell, 1994).

Dental caries is highly prevalent in the older adult population that, as the age increases, a simultaneous change in the oral tissues and the dentition occur. This is attributed to the fact that the oral hygiene practices are not meticulously carried out, resulting in poor oral hygiene which encourages a colonising environment for the acidogenic bacteria such as streptococcus mutans, lactobacilli and actinomyces species. These are considered to be the most important microflora involved in dental decay. These bacteria thrive and multiply in a low pH environment and produce acid which takes the pH below the critical level of 5.3-5.7. Resulting in

demineralization (Mitchell and Mitchell, 1994).

The studies done in South Africa by Van Wyk et al (1977) on 243 elderly Cape Coloureds on tooth loss and dental caries revealed that almost one/fifth of the surviving teeth in these subjects required extractions because of gross dental caries. The trend of dental caries in the elderly population in South Africa is quite similar to that of the elderly in the developed countries (Brauer et al, 1986; Wilson et al, 1987; Angelillo et al, 1990; Jokstad et al, 1996). Root surface caries is highly prevalent in old age. In the developed countries, due to the elderly people retaining more teeth as they age, the focus on root surface caries has increased (Galan, et al, 1995; Cohen and Gift, 1995). In South Africa a study done by Louw et al (1993) showed that with the anticipated increase in the aged adult population and the associated gingival recession, the prevalence of root caries is expected to increase.

Beck (1984) stated that older adults in the USA suffer significantly due to dental caries, but this may be a problem which is overlooked by the dental profession. The nature of caries activity in adults is quite different from that in children. The proportion of secondary (recurrent) caries tend to dominate and in some instances root caries is more prevalent in adults. The problem of root surface caries has been identified as a growing problem in older adults. Banting (1972) found that the prevalence of root caries increases with advancing age and that the chronically ill and institutionalized older adults suffered the most.

Some studies in the developed countries show that dental caries is increasing only slightly among the elderly (Sheiham, 1990). Whereas in some countries like USA, Norway, Scotland and New Zealand the caries rate in the elderly is increasing rapidly (Murray et al, 1991; Kalk, et al, 1992; Jokstad, et al, 1996; Ettinger, 1997;). In the USA, similar to other industrialized countries, a decreased caries rate in children and increasing rate in the aging population has been reported (Ettinger, 1997). Studies that have evaluated the aging population have found that untreated caries is found on the crowns of the teeth in 25% of the cases, although a substantial amount (18%) is root surface caries (Ettinger, 1997). Root surface caries increase dramatically with age because of the greater prevalence and severity of periodontal conditions in this age group. Coronal caries in most elderly people occurred on teeth that had been previously restored (Kalk et al, 1992; Galan et al, 1995; Ettinger, 1997).

2.6.3.3 Edentulism

In a review by Cohen and Gift (1995) it is evident that the percentage of dentate subjects decreases progressively with age. The tooth loss is attributed to dental caries and periodontal diseases. Dental caries being the cause for extraction of all tooth types, with the exception of lower incisors.

Traditionally the primary measure of oral health status in older populations has been the extent of edentulousness (Cohen and Gift, 1995). A Study done in the Netherlands by Kalk et al (1992) reported that the prevalence of edentulism can be regarded as a very rough, but an instructive indicator of the oral health of a particular population.

In South Africa, Van Wyk et al (1977) showed that there was a custom among Cape coloureds which involved extracting maxillary incisors teeth for aesthetic reasons and as a sign of sexual maturity. Data obtained by an FDI working group in 1988 showed the wide variations in edentulousness in South Africa by race at age 60 years and over. The rate for whites was 47%, for Blacks 21%, for Coloureds 72%, and for Asians 29%. Louw and Moola (1979) reported on the dental needs and demands of elderly Cape Coloureds and found that females showed a significantly higher percentage of edentulism and this was attributed to the fact that females sought dental care more often than males.

Although oral diseases are decreasing among the elderly in developed countries, the level of edentulousness is changing slowly (Grabowski and Betram, 1975; Murray et al, 1991; Cohen and Gift, 1995). However in developing countries the level of oral diseases, especially periodontal disease, is increasing in the elderly (Ettinger, 1997), and this is the major cause of tooth loss in a large proportion of the population.

The loss of teeth, which is an irreversible and cumulative process, has been associated with natural ageing (Schou and Eadie, 1991; Miyazaki et al, 1991). Galan et al (1995) showed that tooth loss in the 171 subjects they examined was attributed to dental caries in 77% of the subjects and periodontal disease in 22% with the posterior mandibular and maxillary teeth most likely to be missing.

Studies done by Angellilo et al (1990) in Italy, Wilson et al (1987) in England and Murray et al (1991) in New Zealand all found that the prevalence of edentulousness increased with the increase in age. The prevalence of edentulism differs in various countries. The highest prevalence is found in England and New Zealand and the lowest in USA (Ettinger, 1997).

Other authors are of the opinion that the prevalence of edentulism is decreasing as the elderly are retaining most of their teeth into old age (Galan, 1995; Kalk, 1992; Ettinger, 1997 and Sheiham, 1990). It has been estimated that the total number of edentulous elderly will remain constant at 9 million until the year 2030 in the USA. Edentulousness is still associated more frequently with low socioeconomic status, cultural factors, education levels and place of residence (Angelillo, 1990; Van Wyk, 1977; Ettinger, 1997). In almost all of the studies reviewed the prevalence of edentulism was higher in elderly females compared to the males.

2.6.3.4 Oral mucosa lesions

Oral mucosa lesions are predominant in populations with tobacco habits, such as cigarette smoking and snuff dipping (Van Wyk, Watermeyer and Staz, 1977). Dentures are also cited in the causation of denture sores and hyperplasia in many of the denture wearers, this might be associated with denture wearing habits and denture hygiene.

Most of the knowledge about the epidemiology of oral mucosal lesions in the elderly is based on studies of institutionalized people or of edentulous populations that have high prevalence of denture lesions (Cohen and Gift, 1995). Denture sores are the most common oral mucosal lesions in an elderly population (Schou et al, 1991; Brauer et al, 1986; Jokstad et al, 1996; Van Wyk et al, 1977). The usual aetiological factors are denture usage, denture hygiene, denture age and denture condition. The prevalence of denture stomatitis in older populations varies greatly, but has been shown to affect at least 20% of the denture wearing population.

The South African studies done by Van Wyk et al (1977) on 585 institutionalized elderly Cape Coloureds reported that 22% had denture stomatitis, 24% had leukoderma and 20% had leukoplakia of the oral mucosa, These lesions were associated with denture wearing habits, hygiene and tobacco use. The prevalence of denture stomatitis varied considerably. A Canadian

study by Galan et al 1995, a Norwegian study by Jokstad et al 1996 and a Danish study by Brauer et al 1986 recorded a prevalence of 67%, 52% and 27% respectively.

The prevalence of oral cancer in the studies reviewed is very low. In the USA Ettinger (1997) revealed that 90% of oral cancers occurred in people more than 45 years of age, the average age being 60 years. The incidence of oral and pharyngeal cancer in South Africa is 2-8/100,000/ year. There are racial and gender differences, with the coloured population being the most affected (Hille et al, 1996). This may be due to an increased access and utilization of tobacco in its various forms, as well as alcohol consumption.

2.6.4 Conclusion

The literature review shows that the evaluation of oral health needs as perceived by the professional, is higher than the estimation of needs as perceived by the elderly. It also reveals that the demand for dental care in the elderly does not correlate with the prevalence of oral diseases in this age group. This implies that the presence of a clinical impairment, functional disability and handicap is not necessarily a need for dental care (Sheiham, 1997). For instance the literature shows that a number of elderly people are edentulous but only a small percentage of them possess dentures, but this does not alter the normal function of the mouth in the group that has no dentures. This fact strongly indicates the discrepancy between the need from the professional point of view and the need as perceived by the elderly population.

It is thus, important to consider the oral health needs of the elderly as perceived by the group. The measure of dental care should incorporate not only clinical status assessment, but also the oral health needs as perceived by the elderly. This will facilitate the appropriate planning of oral health care and suitable resource allocation for this group. The future generation of older adults will be more critical and more demanding of oral health care as many of them will be retaining their natural teeth and getting more knowledge of the oral health services available and the cost implications. It is clear that extra resources will be required to maintain and improve oral health in older adults.

In view of the few, South African studies on perceived oral health needs of the elderly population, this study is undertaken to determine the oral health status and perceived needs for

the elderly in Guguletu. This age group has been inadequately served by the dental profession due to a focus on the normative needs assessment only. This fails to represent what this age group requires in terms of oral health care. Ignoring perceived needs and it's determinants leads to poor provision of oral health services to this group of people.

2.6.5 Problem

The oral health status of the elderly was found to be poor in many studies reported (Cohen, 1995). The percentage of non utilizer of dental services in this group is high (Grabowski,1975; Schou, 1991; Shay, 1995). In view of these facts it shows that the elderly have a different perception of their dental needs. The professional (dentist) usually establishes a normative need through clinical examination, which is not a true representative of the perceived need of this group. Normative need lacks objectivity,consumer rights and has been shown to be unrealistic in its approach to oral health care (Sheiham, 1997)

2.6.6 Purpose

Ascertain the perceptions of older adults with regards to perceived oral health needs and services provided, in order to provide information that can:

- Improve the dental services provided to them.
- Provision of oral health education to the elderly.
-Assist the refining and planning for dental health care for the elderly.
- Encourage the treatment of older adults in a more humanitarian and realistic manner.

2.6.7 Aim

To determine the perceived oral health needs for dental care in the older adult population in Guguletu.

2.6.8 Objectives

1) To assess the perceived oral health needs (with regards to social, functional and psychological impacts of oral disease) of older adults aged 55 years and above.

2) To assess the oral health status (periodontal disease, dental caries and oral mucosal lesions in the adult population aged 55 years and above).

Chapter 3
METHODOLOGY

3.1 Introduction

This survey was conducted among a group of black people living in Guguletu. The subjects included older adults from Ekumphuleni home for the aged and those attending NY1 and NY3 day hospitals.

The Ekumphuleni home for the aged was established in 1996 and provides a home for 90 functionally dependent older adults. It is also a club for the aged, where those who are non institutionalized from other areas in Guguletu congregate, are provided a daily meal and recreational activities. The elderly living outside the home meet at the old age club which operates under the auspices of the senior service centre. The NY1 and NY3 hospitals were established in 1962 community projects for the provision of health services to the community. The elderly attend the NY3 clinic for diabetes mellitus, arthritis, hypertension treatment and check ups.

The elderly also get their monthly pensions and disability allowances either at the home or other government centres dealing with pensions.

3.1.1 Sample

The sample consisted of 100 elderly people both dentate and edentulous and 55years of age or older. These were drawn from members of the old age home and elderly patients attending NY1 and NY3 hospitals in Guguletu. The subjects were selected with consideration for their ability to express themselves and the willingness to participate. 46 of the 90 subjects living in the old age home were excluded and 44 participated. Those excluded from the survey were those elders considered:

- Unable to remember due to severe dementia, but those with mild to moderate dementia were included.
- Unable to cope with the clinical examination
- Unable to express themselves due to old age
- unable to hear (hearing disabilities)

- Not willing to participate in the survey
- Mentally disoriented adults and those suffering from Alzheimer's disease.

In summary the selection criteria consisted of:

- Older adults in Guguletu from 55 years and above
- Older adults attending NY1 and NY3 clinics in Guguletu and at Ekumphuleni home.
- Subjects who either were dentate or edentulous.

3.1.2 Equipment

The instruments used in the survey were from the UWC faculty of dentistry. These included mouth mirrors, periodontal probes and explorers. Used instruments were packed and returned to the faculty for sterilization. At NY1 clinic the instruments were provided by the clinic. Transport to and from Guguletu was provided by a colleague and sometimes public transport was used.

3.2 Data collection

A pilot study was done on 10 of the subjects. The aim of the pilot was to assess the feasibility and adequacy of the methods, and to assess whether the questions were ambiguous or too long. The survey consisted of a questionnaire (Appendix 1) and a clinical examination form (Appendix 2).

3.2.1 Questionnaire

Demographic details, which included age, gender, place of residence, type of income, level of education, and past/present occupation from each subject, were then recorded.

The impact of oral diseases with regards to the social, functional and psycho-social aspects to health were included. The presence of dental problems was all assessed, whether they visited the dentist concerning those problems, symptoms or functional limitations. Variables included dental attendance, barriers to dental treatment, current oral symptoms and perceived need for care. One measure of need was demand for dental care which was assessed by attendance at the clinic in recent months. Measures of normative need, were identified as the number of carious teeth, number of filled teeth, number of remaining teeth, periodontal status and tooth loss. Questions on the propensity of behaviour and oral hygiene habits were also asked.

Where patients possessed dentures, the age and type of denture was recorded, as well as their satisfaction with the prosthesis. Edentulous respondents were asked if they felt they needed dentures.

3.2.2 Clinical examination

The clinical examination was carried out by the researcher. The DMFT, CPI index and mucosal lesions were recorded using WHO method (1997). The research assistant who was administering the questionnaire, as she was Xhosa speaking, further facilitated the process by calling the patients and interviewing them before they were examined clinically. The oral examination was done with the patient seated and illumination was provided by natural light. The examination included the evaluation of the health of the oral mucosa tissues noting the presence of any apparent pathology, assessment of oral hygiene and the status of every tooth. Based on the findings of the clinical examination, each subject was classified according to whether or not he or she needed the following categories of treatment, that is, restorative, periodontal, prosthodontics, extractions or the immediate treatment for the relief of pain or infection.

3.2.2.1 Measurement of periodontal disease

The Community Periodontal Index (CPI) was used to assess the periodontal status. The indicators for periodontal status used for this assessment were gingival bleeding, calculus and periodontal pockets.

A specially designed light weight CPI probe with a 0.5mm ball tip was used, with a black band between 3.5 mm and 5.5 mm rings to facilitate detection of pocket depth. The mouth was divided into sextants defined by tooth numbers 18 - 14, 13 - 23, 24 - 28, 38 - 34, 33 - 43, 44 - 48. A sextant was examined only if there were two or more teeth present which were not indicated for extraction. The index teeth examined were:

17, 16	11	26, 27
47, 46	31	36, 37

If no index teeth were present in a sextant qualifying for examination, all remaining teeth in that sextant were examined and the highest score recorded as the score for the sextant. The periodontal examination was performed on all dentate subjects who were assessed not to be at risk of getting subacute bacterial endocarditis. This condition was assessed through checking their medical records.

The teeth were examined for the presence of supra and subgingival calculus. The depth of the pockets was determined by probing from free gingival margin to the cemento-enamel junction. Any bleeding on probing was recorded. Teeth with attachment loss and mobility were not included in the examination.

3.2.2.2 Measurement of dental caries

The criteria used to detect dental caries is that which is outlined by WHO (1995) but with minor modifications. Decay was recorded when there was frank cavitation on the tooth surface and was assessed by visual examination. The probe was only used when in doubt, especially in the posterior and approximal surfaces.

The examination was performed with a probe and mouth mirror. All examinations were done by using natural light, except in NY1 clinic where a dental light was present.

3.2.2.3 Measurement of oral mucosal conditions

The oral lesions were recorded as ulcerations, denture sores, hyperplasia, cheilitis, stomatitis and oral cancer. An ulcer was recorded when there was erosion and a frank breach on the mucosal surface. Cheilitis was recorded when there was fissuring at the corners of the mouth. Hyperplasia was a clear overgrowth of the gingival tissue and the overgrowth of the lower denture bearing area.

3.2.2.4 Denture examination

The dentures were examined outside the mouth as well as inside. The quality of the denture was assessed by the persons subjective response on the satisfaction with the prosthesis. Stability and quality of the dentures was also assessed.

3.3 Recording and data analysis

The data was recorded on the questionnaire form (Appendix 1) and clinical examination on the oral health status form (Appendix 2). The data collected every day was checked for any mistakes, missing information or any other discrepancies. This data was then transferred into a prepared spread sheet.

The data was analysed using EPI Info. The tests for statistical relationships included the Chi-squared and odds ratio tests. The variables that were tested included personal characteristics, clinical variables, dental treatment needs and psycho-social and functional indicators of oral diseases. In the analysis of edentulous subjects, the only clinical variable used was the need for prosthetic treatment.

3.4 Examiner variability

Inter and intra examiner consistency in the standardised diagnosis of oral conditions during oral health surveys is important (WHO - Oral Health Surveys, 1997). Reliability, also termed repeatability refers to the stability or consistency of information supplied by the examiners. Reliability is measured by performing two or more independent measurements and comparing the findings, using an appropriate statistical index (kappa for example).

In order to obtain an acceptable level of reliability the examiner was pre-calibrated and trained prior to conducting the survey. The calibration was done for dental caries and periodontal disease. It was evaluated through re examinations on a group of school children chosen for the calibration exercise. Repeat examinations were not done on older adults as the sample was too small to give a statistically significant value. Intra examiner agreement was analysed using the kappa statistic and percentage agreement method. The results of the calibration were 92% for dental caries and 80% for periodontal disease diagnosis. These results are similar to those recommended by WHO (1997) on percentage agreement. Therefore, these measures of agreement for DMF(T) and CPITN provide an acceptable level of consistency for the data in this survey.

Chapter 4

RESULTS

4.1 Sample characteristics

The sample consisted of 100 older adults of whom 40 were males and 60 were females. The mean age of the group was 68 years with a range of 55 - 89 years (Figure 1). 44 of the older adults lived in the old age home while the remaining 56 adults lived in private homes (Figure 2). These people depended on a monthly pension of R 520 and some of them were supported by their children. The data in table 1 & 2 describes the socio-demographic characteristics of the study sample. The majority of the subjects were female (60%) and 43% of the sample had a secondary level of education (Fig 3). A large percentage were unskilled labourers (83%) before becoming pensioners. Most of the participants (57%) had medical problems ranging from diabetes, hypertension and arthritis, and received treatment for these conditions.

Table 1:

Sample size by age and sex

Age	Male	Female	Total
55 - 60	7	18	25
61 - 66	7	16	23
67 - 72	8	14	22
73 - 78	10	4	14
79 - 84	4	5	9
85 + +	4	3	7

Table 2:

Socio demographic characteristics of the sample by gender

Variables		Male	Female	P value	chi sq	d f
Age:	Range	55 - 89	55 - 87			
	Mean Age	68	68			
Location:	old age home	20	24			
	Private home	20	36			
Occupation:	Skilled	4	7	0.452	2	2
	Unskilled	36	53			
Education levels:	Primary	21	19	0.070	12.02	3
	Secondary	10	33			
	Matric	1	4			
	No education	8	4			
Income:	State pension	25	33	0.700	0.57	2
	Child support	13	23			
	Other	2	4			
General health:	Excellent/ good	20	23	0.146	6.81	4
	Fair/ poor	20	37			
Source of dental care:	Private	20	33	0.067	7.15	3
	Government	14	25			
Functional Status:	Dependent	20	24	0.0001	19.85	3
	Independent	20	36			
Dentate status:	Dentate	35	37	0.241	33.93	29
	Edentate	5	23			

Fig. 1: Sample size by age and sex

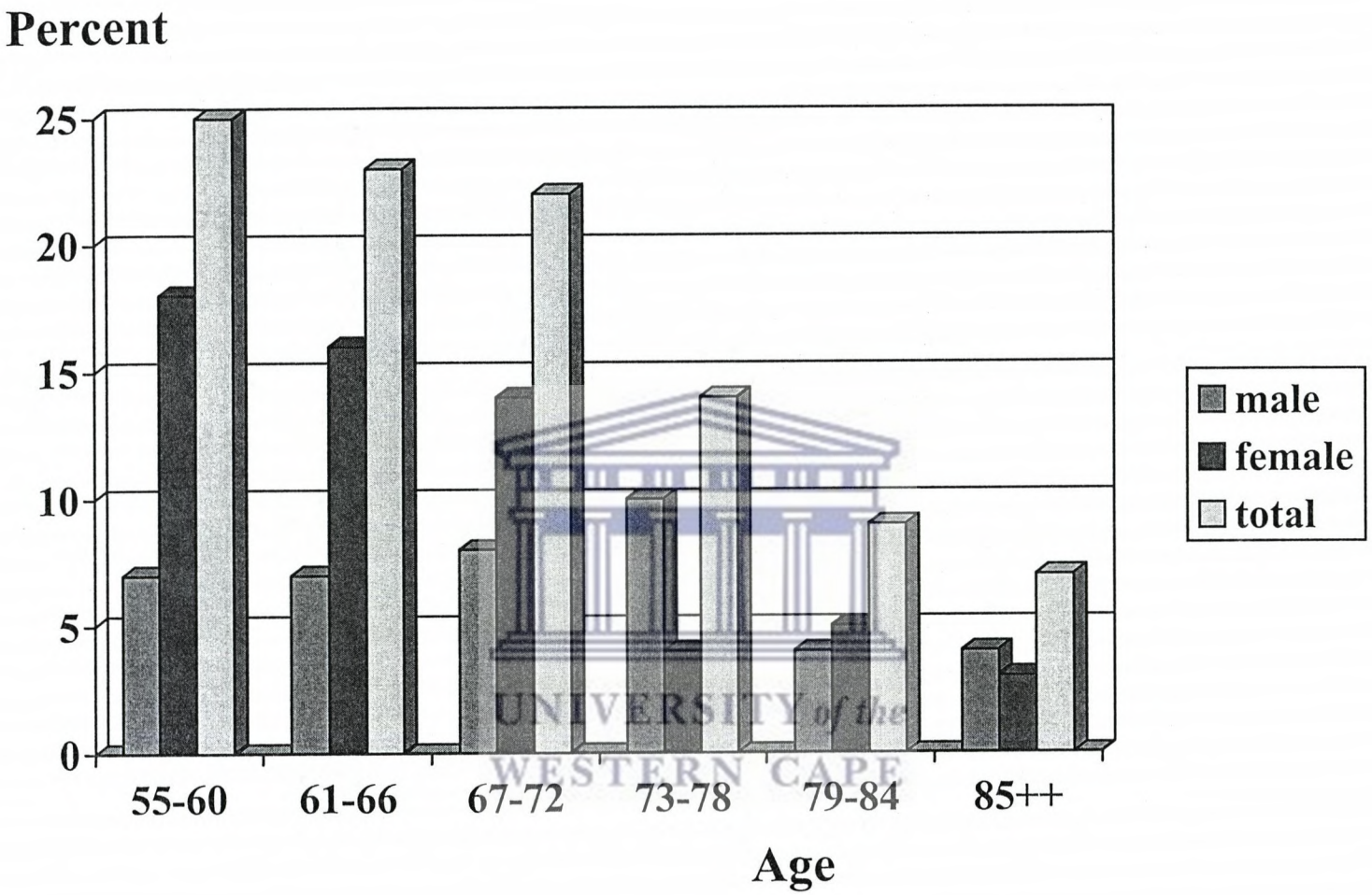


Fig. 2: Percentage distribution of location b gender

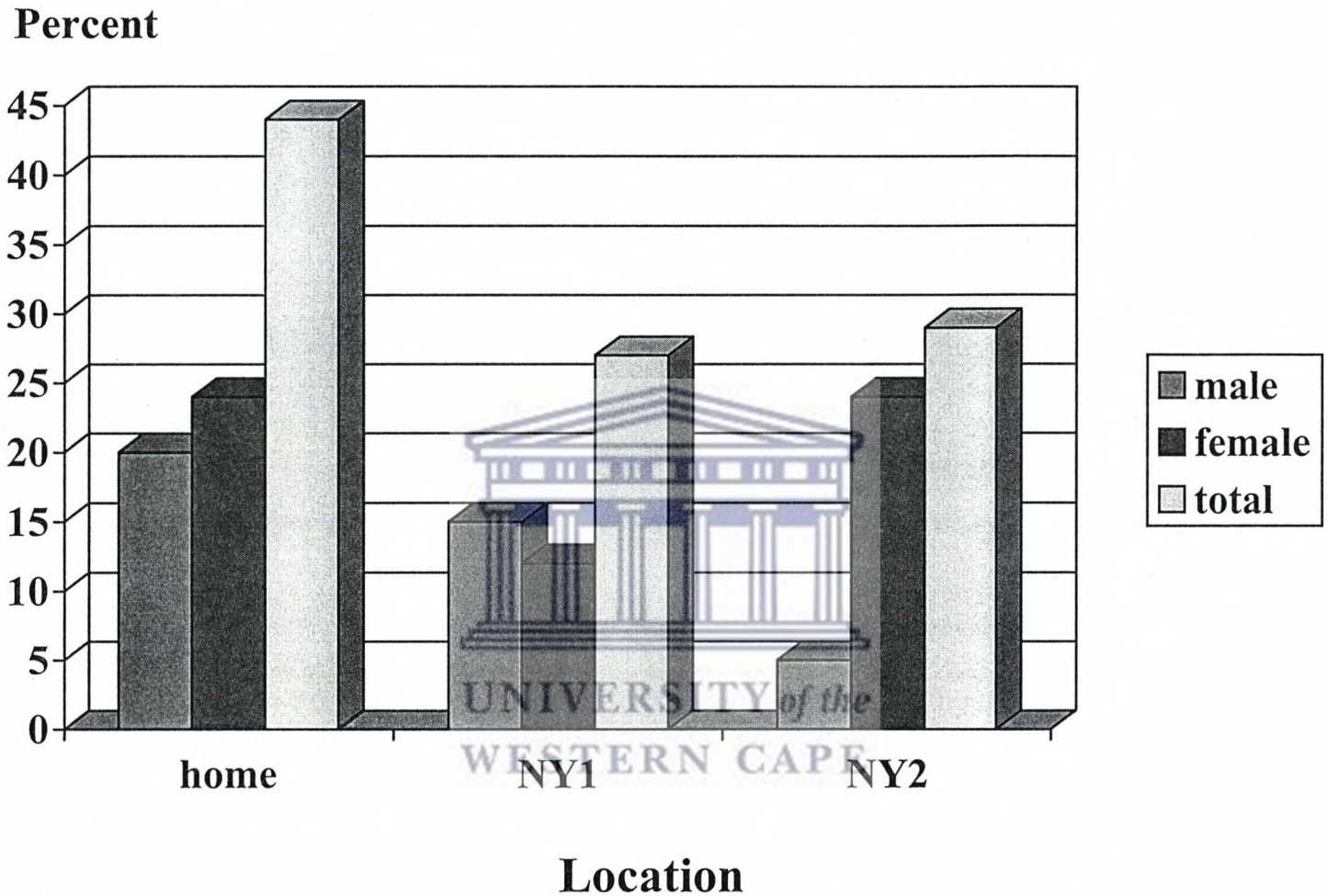
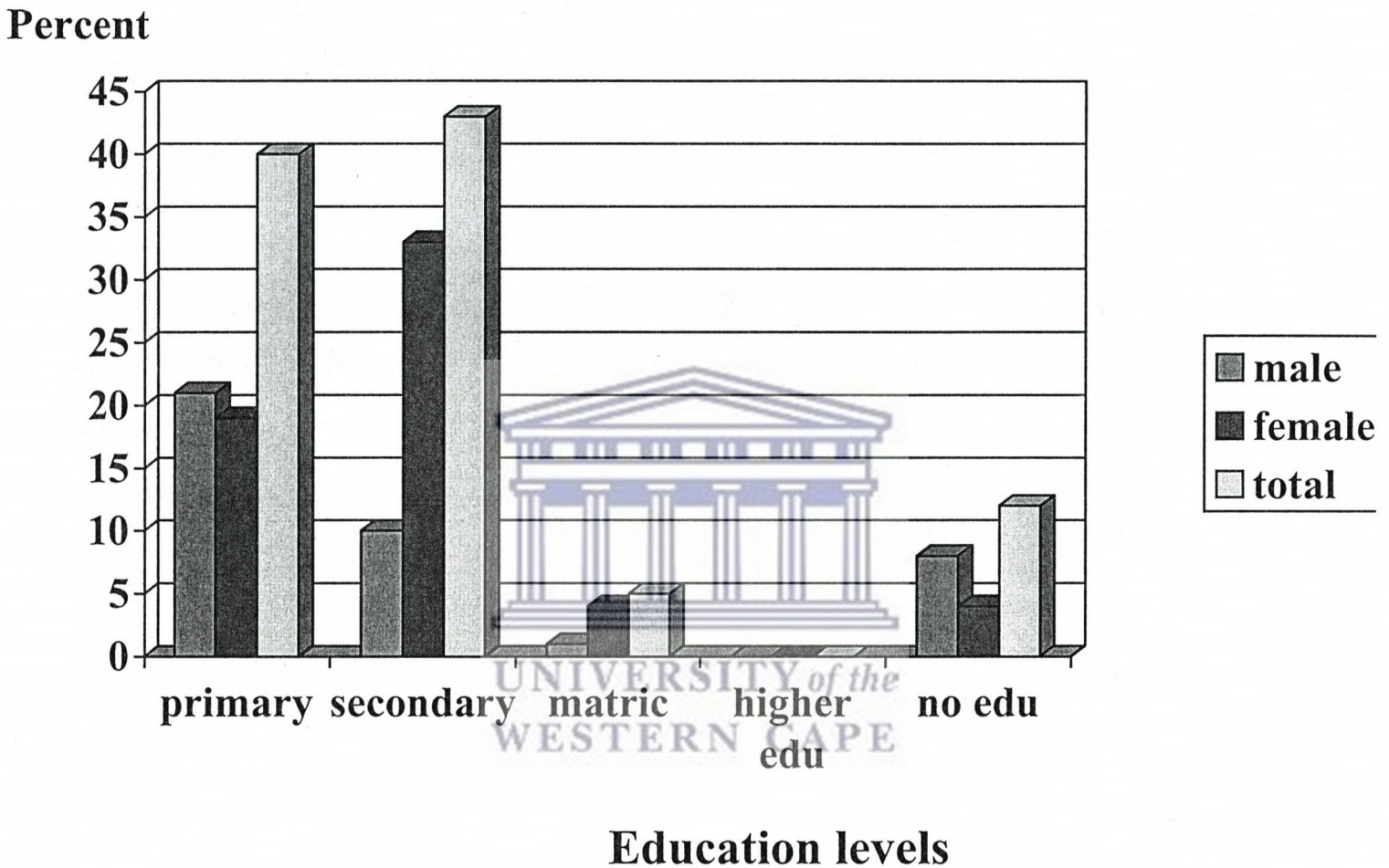


Fig. 3: Gender distribution of educational levels



4.2 Complaints / Problems

During the interview about 88% of the study sample (Table 3) complained of a problem with teeth, gums, dentures, jaws, eating and speech. Most of the participants mentioned the problems at the beginning of the interview, while other participants had to be asked specific questions about chewing, appearance, pain, speech problems to reveal their problems. Most of the subjects in the institution had the problem for more than one year and had never sought treatment.

Table 3:

Distribution (%) of perceived need

Complaints/ problems	Male %	Female %	Total %
No, problems	9	3	12
Yes, teeth	15	13	28
Yes, gums	0	1	1
Yes, dentures	2	13	15
Yes, function limit	7	11	18
Yes, teeth & gums	3	6	9
Yes, teeth & mouth	2	8	10
Yes, all problems	2	5	7
Perceived need %	31	57	88

4.3 Oral status

In relation to their oral health status, 28% of the sample was completely edentulous (Fig 10) 18% had dentures, (2% were male and 16% female). Poor retention and stability were present in 11% of the subjects. A need for treatment (normative) was identified in all the subjects examined except one (Table 5b). There was very poor oral hygiene, with an average 1.9 decayed teeth, 3 filled teeth, and a DMFT of 20.2. The DMFT value was high because of the large number of missing teeth, (with the mandibular and maxillary posterior teeth more likely to be missing). The subjects had a total of 1244 teeth with an average of 12 teeth per subject, ranging from 3 - 30 teeth (Figure 4) only four subjects retained at least 30 of their natural teeth, which were also free from caries. In the total sample (Table 8) 64% had calculus and 68% had two or more bleeding sextants. Pockets with more than 4mm depth were found in 25% of the sample (Figure 5). Only four subjects retained at least 30 of their natural teeth, which were also free from caries. (5%) had one or more mucosa lesions and these included, ulcerations, hyperplasia and denture stomatitis.

Fig. 4a: Percentage distribution of dentate and edentulous older adults

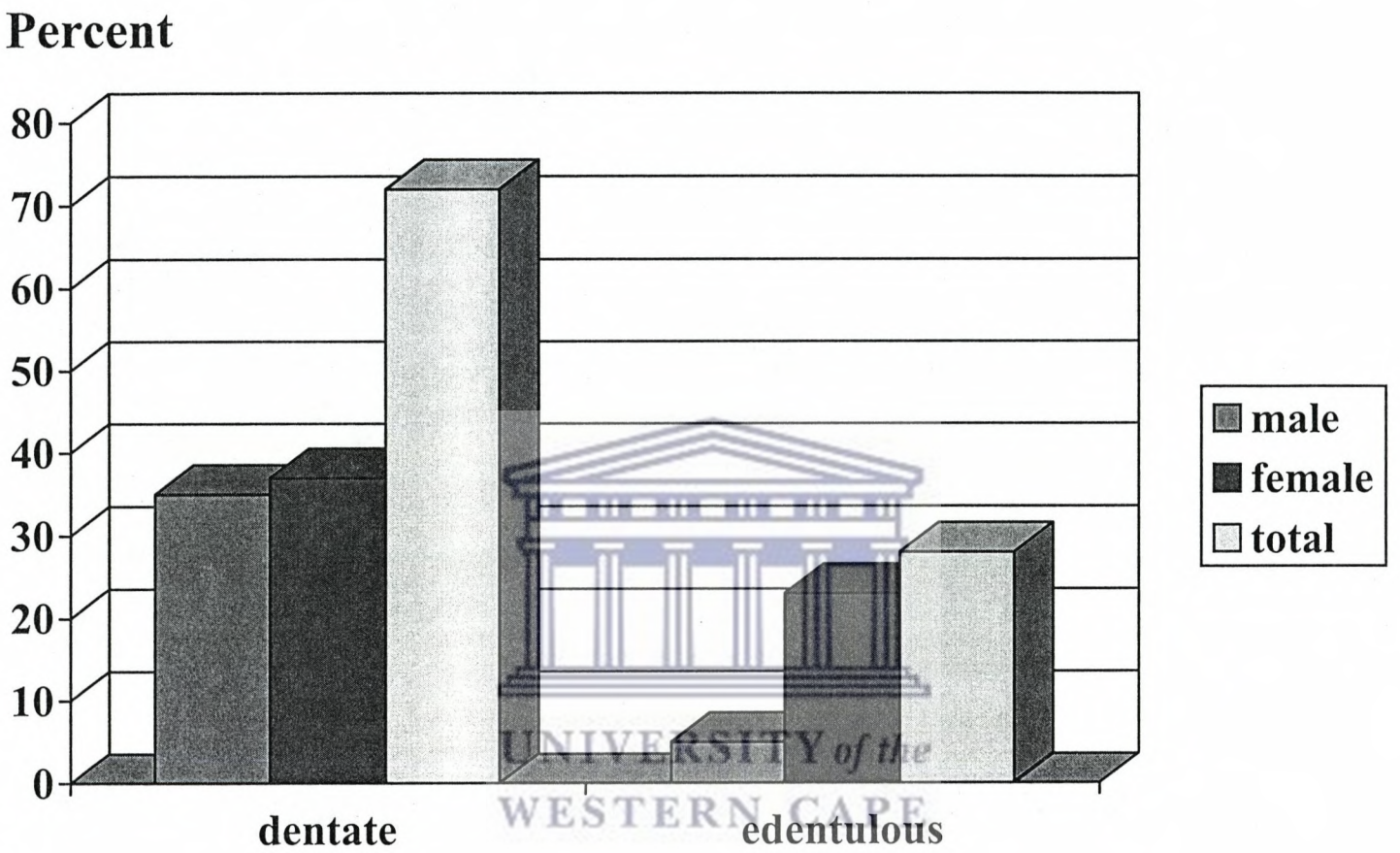


Fig. 4b: Gender distribution of the number of teeth remaining.

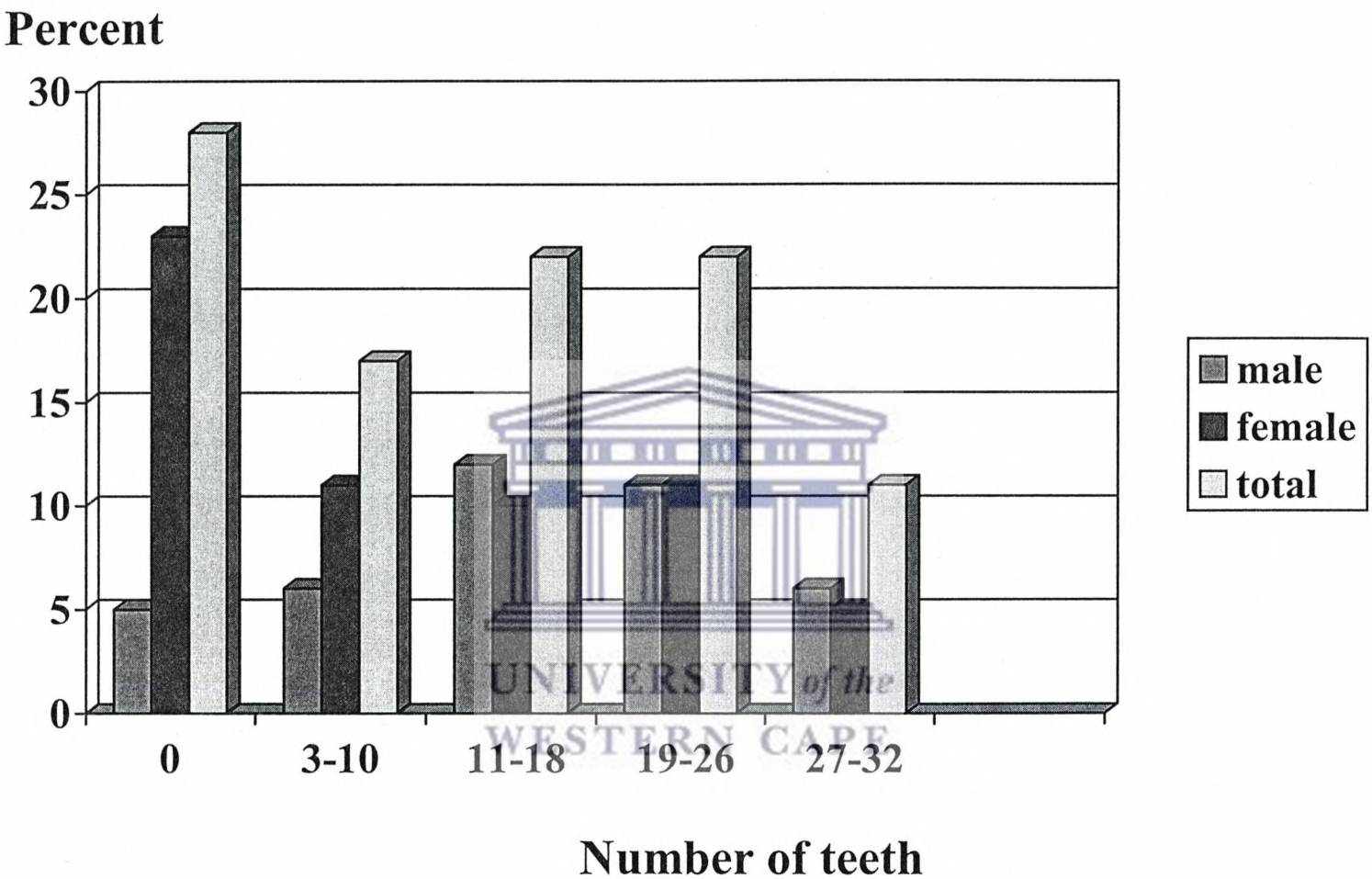
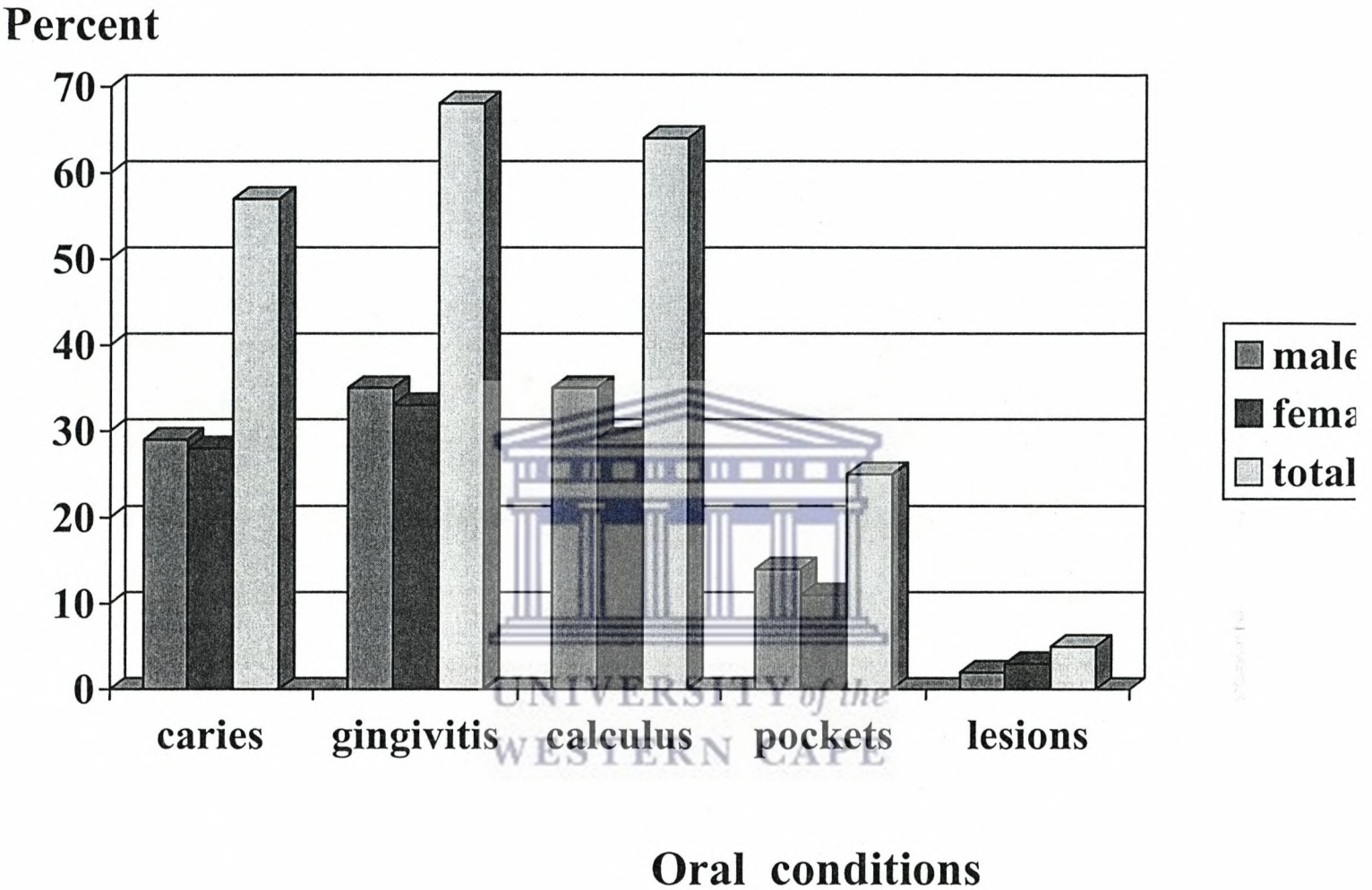


Fig. 5: Percentage distribution of oral conditions by gender



4.4 Oral hygiene habits and propensity of behaviour

Oral hygiene in most of the participants was poor. The edentulous subjects (28%) reported rinsing with water once a day. Those with dentures used denture cleanser, soap and a tooth brush to clean their dentures. Poor denture hygiene was regarded as the remains of food and plague on the denture surfaces was present in 12% of the participants, some of the subjects wore their dentures when they slept. However with the exception of daily tooth brushing using fluoridated toothpaste no other dental hygiene practices were performed. Flossing and rinsing with fluoride containing rinses were practices that seemed to be new to them. Almost 66% of the participants reported brushing only. Of these 37% brushed once a day, 30% twice a day, and 5% thrice. Many of the subjects, (88%) had never been given oral hygiene instructions by the dentist or other dental personnel.

21% of the participants reported smoking cigarettes, and 2% said they used snuff. 14% out of the 21% smoked more than three times a day. When asked if tobacco was bad for the health 70% agreed, 23% disagreed, and 7% did not know. When asked for their opinion on visiting the dentist regularly for oral health improvement, 64% were positive, 19% thought it was a waste of time, and 13% did not know the benefits.

4.5 Oral health needs (perceived and normative)

Perceived need was based on existing dental problems and the recency of the last visit to the dentist. The reported problems were more common among women (57%) than among men (31%). Dissatisfaction with their own dental status was also more common in women than men. Edentulous subjects were more likely to be dissatisfied than dentate subjects. 63% of the participants felt they needed dentures and 25% felt no need even though after examination the need for dentures was evident.

The participants (88%) showed a large perceived need for dental care, that is 29% perceived a need and demanded care, and 59% had a perceived need with intentions to visit a dentist. But due to a number of barriers in seeking care, this need was not met. This unmet need for care is dominant in older adults living in the old age home. They have a perceived need for care but have never been to a dentist due to a number of reasons. 12% felt no need for dental care of whom 9% were men and 3% were women. Females showed a high perceived need (57%) compared to males (31%) (Table 3).

There is also a discrepancy between the perceived need (88%) and normative need (99%), (Figure 6a). Some of the elderly in this survey did not perceive a need for care (12%), even though they had high levels of untreated disease, poor oral hygiene and a need for oral health care was evident. However when they were asked why they did not seek dental treatment they often responded by indicating a lack of perceived need, costs, feeling too old and frail or that they would die soon so there was no need of treatment. The discrepancy between perceived and normative needs in terms of caries, was moderate (25%), substantial for periodontal disease (47%) and very low for dentures (6%) (Table 4).

The treatment needs in the overall sample ranged from dentures (69%), extractions (56%), scaling and root planing (50%), conservation (10%), oral medicine (4%) and re-basing of dentures (1%), (Figure 6b). No treatment was needed for only one person, who had 30 remaining teeth with good oral health.

Table 4:

Comparison between perceived and normative need

Problems	Perceived need %	Normative need %
Teeth	28	53
Gums	21	68
Dentures	63	69

Table 5a:

Distribution of treatment categories provided (%)

Treatment	Male	Female	Total
Extractions	33	45	78
Dentures	0	8	8
Prophylactic care (Scaling and root planing)	1	6	7
Restorations	2	1	3
Preventive care (OHE, OHI, dietary counselling)	1	2	3
No Treatment given	6	1	7

Extraction was the main treatment option given to the older adults in the clinic (chi square=17.10; d f=7; p value=0.016).

Fig. 6a: Gender distribution of perceived and normative need

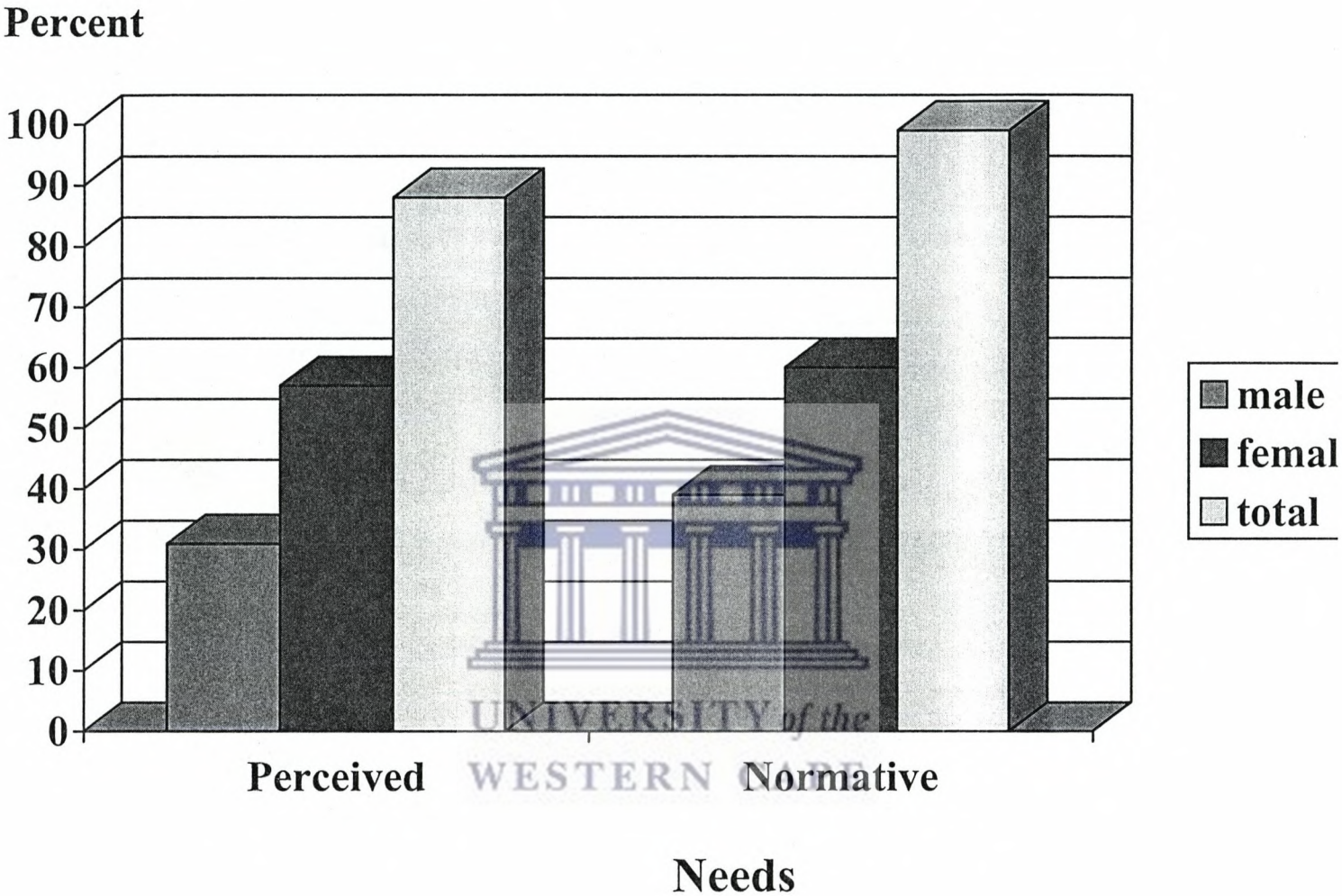
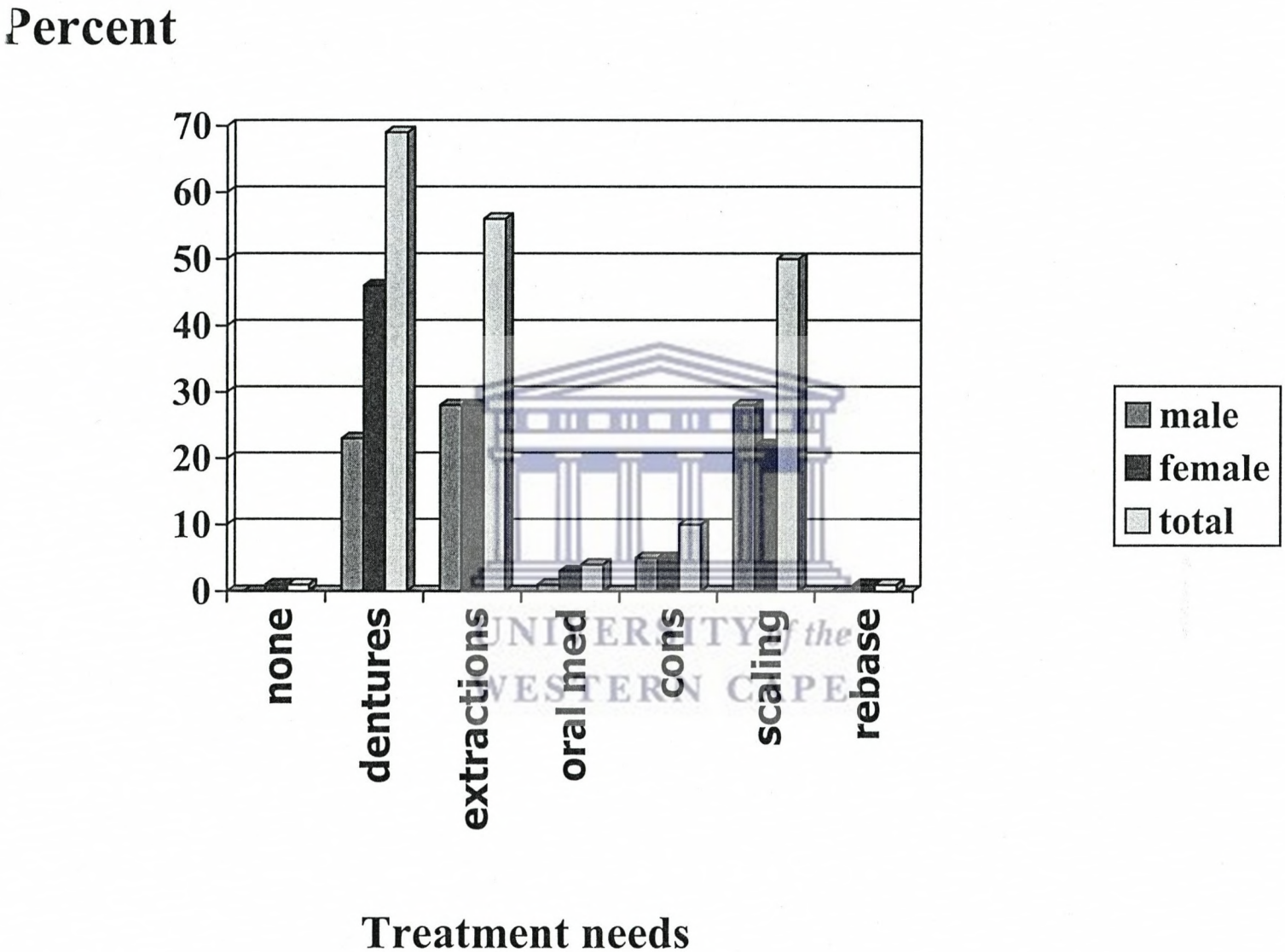


Fig. 6b: Percentage distribution of treatment needs by gender



4.6 Barriers to utilization of dental services

The dentate subjects showed a greater tendency to use the dental services compared to the edentulous subjects. When asked about the last time they went to a dentist the majority said it was more than five years ago (45%), (Figure 7). About 9% of the dentate reported visiting the dentist in the past year. But some of the dentate subjects had not been to the dentist in three years or more. Multiple visits in the previous twelve months were not common in this community. However, 17% of the participants had visited the dentist in the past months. 7% had never been to a dentist in their lifetime. Among the 88 participants who perceived they had a problem only 29 of them went to the dentist, the remaining 59 had problems but due to a number of barriers they did not go for dental care.

The most frequent reason for visiting a dentist was toothache (28%), followed by denture problems (7%). The most cited treatments obtained during these dental visits were extractions (78%), dentures (8%), preventive care (3%), prophylactic care (7%), and restorative care (3%), (Table 5a). These services were usually provided at Guguletu dental clinic free of charge, however due to other constraints such as waiting for many hours, availability of services, costs of dentures and long waiting lists of patients attending the clinic, the elderly who could not cope went to private dentists in the area. Those who couldn't pay private dentists or cope with problems relating to the dental clinic went back home with their problems untreated.

Among those participants who reported not having visited a dentist for more than three years, the most cited reason was an absence of perceived need for care, financial factors, no problems or a problem which was considered not serious enough to seek care. Nearly half of the people living in the old age home cited the main reason for not utilizing dental services as their health and functional impairments. Other reasons cited were costs (35%), fear (7%), time problems (6%), transportation (5%), bad experiences with dental treatment, lack of confidence with the dentist and availability of services (6%), (Figure 8). Edentulous subjects on the other hand were much less likely to have visited a dentist after they had their last tooth/teeth extracted (23%). Women visited a dentist more frequently than men (Table 6 and 8).

Table 5b:

Distribution (%) of potential demand for different treatment categories

Category	Male %	Female %	Total %
No, treatment needed	0	1	1
Dentures	23	46	69
Extractions	28	28	56
Oral medicine	1	3	4
Conservation	5	5	10
Scaling and root planing	28	22	50
Re base of dentures	0	1	1

Note that the need for dentures in females compared to males is greater due to the fact that they have a higher edentulous rate than men. The results in table 5b signifies a high normative need in three categories (scaling, dentures and extractions) (chi-square=2.92; d f =3; p value =0.404).

Table 6:

Perceived barriers to demanding care (%)

Perceived obstacle	Males (%)	Females (%)	Total (%)
Fear	1	6	7
Costs	13	22	35
Time problems	3	3	6
Transportation	2	3	5
Transport, cost & time	2	4	6
Total	21	38	59

Table 7:

Distribution of need for dentures between males and females

Need	Male	Female	Total
Not applicable	9	3	12
Yes, need dentures	22	41	63
No need of dentures	9	16	25

Fig. 7: Gender distribution of last visit to a dentist

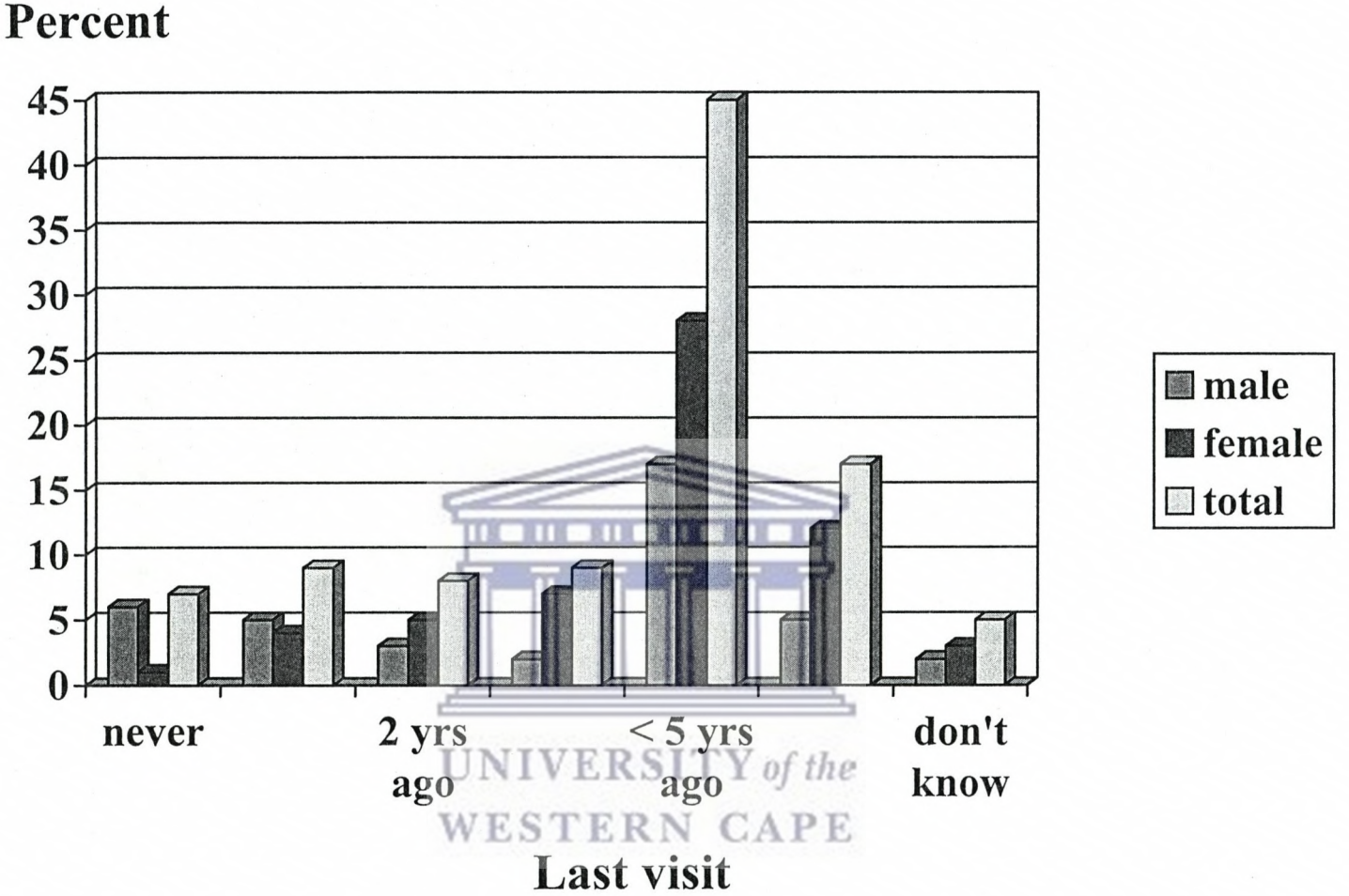


Fig. 8: Gender distribution of perceived barriers to care

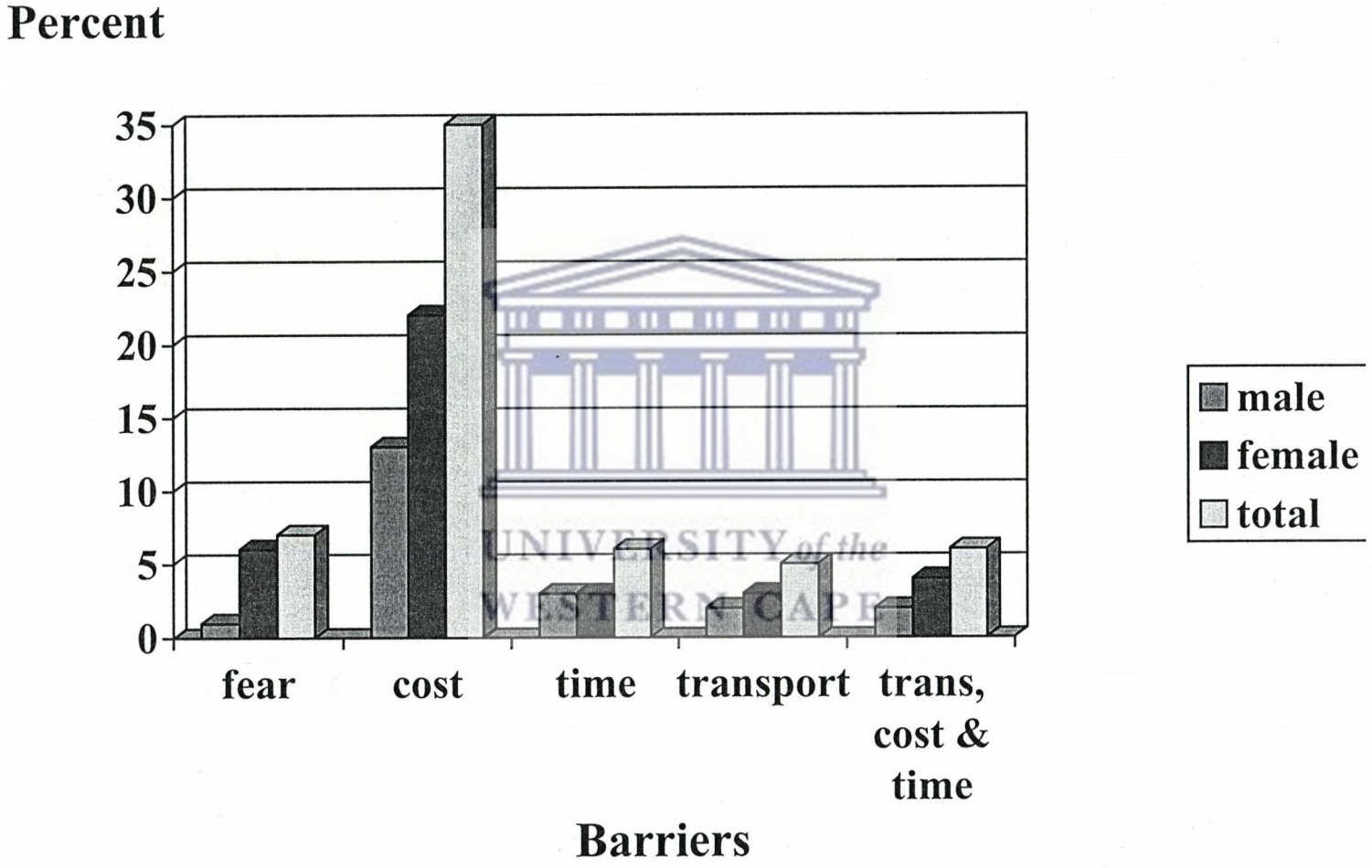


Fig. 9: Denture Status

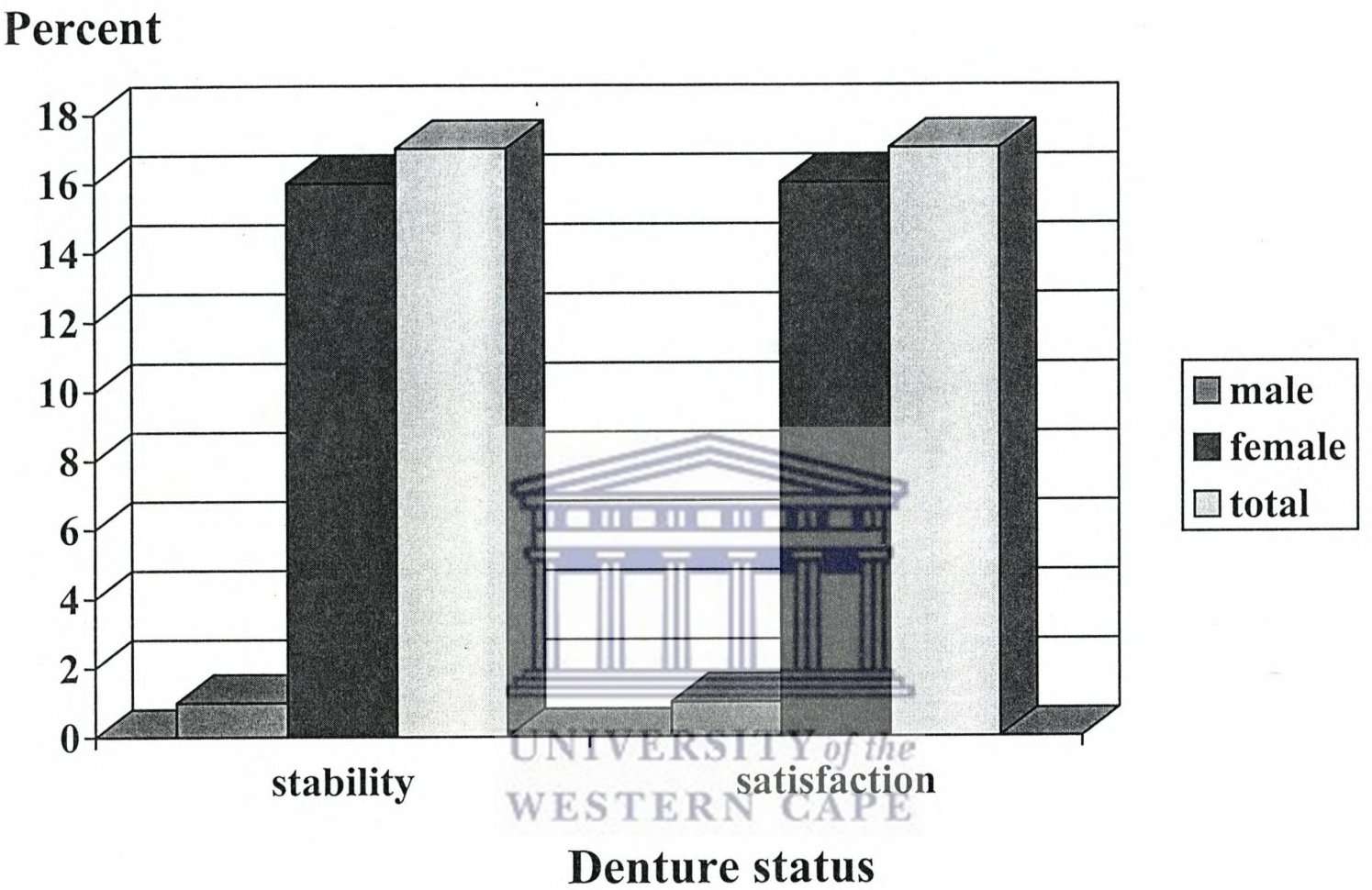


Table 8: Frequency distribution of the main variables by gender

Reported problems:		Male	female	Total	p value	chi sq	d f
Teeth	(No)	14	26	40	0.642	11.55	14
	(Yes)	26	34	60			
Mouth	(No)	31	44	75	0.859	5.44	10
	(Yes)	9	16	25			
Gums	(No)	35	44	79	0.379	5.30	5
	(Yes)	5	16	21			
Dentures	(No)	39	49	88	0.21	9.52	7
	(Yes)	1	11	12			
Oral examination:							
Pockets	(No)	26	49	75	0.059	3.56	-
	(Yes)	14	11	25			
Calculus	(No)	5	31	36	.00006	15.98	-
	(Yes)	35	29	64			
Bleeding gums	(No)	5	27	32	.0006	11.65	-
	(Yes)	35	33	68			
Oral lesions	(No)	38	57	95	0.404	2.92	2
	(Yes)	2	3	5			
Decay	(No)	11	32	43	0.0726	22.30	14
	(Yes)	29	28	57			

Fillings	(No)	38	59	97	0.446	1.61	2
	(Yes)	2	1	3			
Other characteristics:							
Denture stability	(No)	1	10	11	0.006	10.07	2
	(Yes)	0	6	6			
Denture satisfaction	(No)	1	10	11	0.006	10.07	2
	(Yes)	0	6	6			
Dentate	(No)	5	23	28	0.241	33.93	29
	(Yes)	35	37	72			
Visits to dentist	(No)	21	38	59	0.030	6.97	2
	(Yes)	10	19	29			

4.8 Statistical analysis and association between variables

Table 3 lists those answers given by 88 participants. No significant differences were noted between the reported complaints of males and females, for most of the complaints but more females than males perceived a need for care (p value=0.08). Those subjects who had a perceived need for dentures, there was a statistically significant difference between males and females as illustrated in table 7. All the variables which were tested and had significant findings are listed in tables 9 and 10 below. The presence of signs and symptoms which were painful were significantly associated with perceived need.

Table 9: Statistically significant associations between variables

Variable 1	Variable 2	T statistic	d f	p value
Pain	Mouth	2.64	100	0.015
Pain	Gums	3.38	100	0.001
Pain	Teeth	3.75	100	0.0006

There was no significant difference in the perceived barriers to seeking care between males and females (Table 6, p value= 0.491). But there was a statistically significant difference on the recency of the visits to the dentist between males and females (p value=0.0306) with females visiting the dentist more frequently than males. There was a statistically significant relationship between the denture stability and the education levels of the participants (p value=0.029) with those who had education complaining of the dentures not being stable.

A statistically significant difference was established between males and females education levels with the females being more educated than males. Components of the DMFT for the sample were analysed and it was established that there was no significant difference between the male and female decayed component, filled component, and the remaining teeth. The chi square statistic reveals statistically significant differences in pockets, calculus and bleeding values between males and females (Table 8).

There was also a significant association between the presence of calculus, bleeding and education levels. The level of education and number of filled teeth is strongly related to income. A statistically significant difference was established between the location and denture possession, stability, satisfaction, pockets, calculus, and bleeding. Another association with significance was the cost for dental care and the number of visits to the clinic. The cost for care was expressed as one of the main barriers to demanding care. The health of the individual was not significantly associated with number of visits. But the health of the individual was significantly associated with functional status (dependent/independent), (Table 10).

The P values which denoted significance due to the small numbers of males and large numbers of females have not been discussed in the analysis as they may be skewed (Table 8). The correlation between smoking and oral hygiene/ oral lesions was not assessed in this study.

Table 10:

Statistically significant associations between variables

Variable 1	Variable 2	Chi square	d f	p value
Education	Denture stability	14.03	6	0.029
Education	Bleeding gums	7.71	3	0.052
Education	Calculus	11.63	3	0.008
Income	Filled teeth	12.74	6	0.047
Income	Education	39.42	4	0.0000006
Location	Denture possession	11.80	3	0.008
Location	Denture stability	13.77	6	0.0323
Location	Denture satisfaction	11.62	6	0.07
Location	Pockets	20.66	3	0.0001
Location	Calculus	19.67	3	0.0001
Location	Bleeding	15.74	3	0.01
Visits	Costs	39.47	4	0.000006
Visits	General health	14.85	8	0.062
Denture sores	wearing habits	7.63	-	0.005

Chapter 5

5 DISCUSSION

5.1 Introduction

This study has revealed that older adults living in Guguletu especially those institutionalised at the home for the aged constitute a dentally neglected group. The need for care in this group is evident and the impact of oral diseases on the elderly is great. But the cost for dental care and access to these services hinders the demand for care in this age group. This has led to many older adults being edentulous as a result of dentists extracting teeth. The system of extracting teeth and providing dentures in the elderly has been there for many years as the only type of service rendered to this group of people. The loss of natural teeth has become an inevitable part of the process of aging and this seems to be due to lack of dental education and preventive care in this age group.

Indeed, the need for oral health promotion and education in this group is important as the nature of oral diseases in the elderly are a result of progressive deterioration of oral conditions due to a backlog of unmet needs. The survey demonstrates a high level of edentulism of 28% in Guguletu. This level of edentulousness in Blacks is similars to that found by Grabowski and Bertram,1975; Miyazaki et al 1991; Murray et al, 1991; Galan et al 1995 in the developed countries. The females showed a higher level of edentulousness than males due to the fact that females seek dental care more often than males and the only treatment rendered to this group has been extractions throughout the years. This trend has to change, with oral health promotion directed to this group of people.

The treatment need assessed by the clinician was high, with 99% of the respondents identified as needing treatment. The demand for dental care was very low (29%). Another 59% perceived they had a problem but due to a number of barriers did not demand care. Findings from this study have revealed that many older adults have insufficient information about oral health care in general. When they became aware of all the treatments they could benefit from other than extraction, they became interested in getting care. Tennsdedt et al (1994) stated that the perceived need and attitudes towards dental care in older adults are important influences in the

demand for care. Hence older adults need to be convinced and educated on the importance of regular dental care. This could dramatically reduce the prevalence of oral diseases and edentulism in the future generations of older adults and thus improve the quality of life of these people.

5.1.1 Oral health needs (perceived and normative)

There is a discrepancy between the perceived and normative needs. This discrepancy is also evident in other studies reviewed (Mosha and Scheutz, 1993; Gilbert et al, 1994; Tennsdedt et al, 1994). The discrepancy between the normative need for dentures and perceived need is small/ minimal as a large percentage of the elderly in this survey are edentulous and only few of them possess dentures. Those with dentures, complain of loose fitting dentures that are also very old. The poor quality and age of the dentures contributed to the increased need for prostheses. This assessment of need for prosthesis was more theoretical than clinical, because the clinical estimates would not consider the subjects with no supporting ridges.

A statistically significant relationship ($p=0.008$) between the possession of dentures and the location of the person was established. Very few of the elderly living in the old age home had dentures. This is explained by the financial problems they face, as their only income was their monthly pension and physical dependence on someone to get them to a clinic for treatment. Those who lived in private homes had additional financial support from their children. The elderly were more likely to be satisfied with their upper dentures than the lower dentures and some of them even wore the upper denture without the lower denture.

Perceived need for care was mainly expressed by dentate subjects because nearly all of the participants attended a dental clinic when they had problems with their teeth and not gums. This finding is similar to that reported by Gilbert et al (1994) and Ettinger (1997) that the presence of teeth was a better predictor of perceived need than the usually reported factors of income and education. It would appear that this group of people still regard the dentist as a 'tooth fixer'. Hence when they have problems other than those related to the tooth they assume that their problems cannot be attended by a dentist.

Although, 88% of the respondents perceived a need for dental care, only 29% demanded care.

This may be due to the number of barriers they perceived (Table 6) and also to the relatively symptomless course of dental caries and periodontal disease during the early stages of the disease process. Tervonen and Knuuttila (1988) suggested that people's awareness of periodontal problems increase with severity of the disease as the destructive changes set in.

In this study older people seem to under-estimate their number of decayed teeth. Signs and symptoms of decayed teeth that were painful and interfered with daily activities or more easily recognised, were found to be associated with perceived need for care in the elderly in this survey. Statistical analyses of the results showed that there was a significant association between the signs and symptoms which were painful and the perceived need for care (Table 9). This finding is similar to that found by Gilbert et al (1994) and Sheiham and Spencer (1997) who concluded that three factors were related to perceived need for dental care: the extent to which the symptoms were perceived to be threatening, disruptive or painful; familiarity with the symptoms and perceived personal responsibility for their occurrence; and how embarrassing the symptoms were to that individual.

This attitude towards oral health care can be explained by the health belief model, which states that an individual will weigh the perceived seriousness, perceived susceptibility of the problem against the perceived barriers and benefits before deciding on what action to take to ward off or control ill health (Glanz et al, 1996). Based on the findings of this survey and the information above, the cost of dental care is the major barrier to the demand for care in older adults. Hence perceived need can be high, but if the perceived barriers are also high and the benefit unknown the demand for care becomes debatable in a situation like this. To overcome such barrier behaviour can be changed by providing these people with the right oral health education, motivation and ensuring maximum benefits to this age group.

The treatment needs (normative) in this age group ranged from extractions to re-basing of dentures. Many of the older adults are not aware of the various treatment options available in dentistry. They perceive that extraction is the only treatment available. Hence they only seek extraction services, which leads to a large percentage of them being edentulous. The DMFT was very high due the increase of the M value (missing component) as the age increases. On average the group required some restorative care (Table 5b), but only three people in the whole

sample had fillings. This suggests that large numbers of teeth could be restored if the resources to provide the treatment were available and the dentists were willing to provide the care.

High levels of periodontal diseases and poor oral hygiene were common in this survey. The need for periodontal treatment in this group is great and more severe periodontal problems may affect the minority of the dentate older adults if quick measures are not taken. Calculus does not cause a progression of periodontal disease to a severe state, and therefore does not necessarily need to be removed (Miyazaki et al, 1991). But still there are some older adults who are at risk of developing severe periodontal problems and so scaling and root planing could benefit these people.

A statistically significant relationship was established between the location and the periodontal health of the participants. It seems that those living in the old age home had very poor oral hygiene and the extent of periodontal disease was severe in this group. It may be that most of the older adults in the home are frail and functionally dependent and oral hygiene practises are not meticulously done and sometimes not practised at all. Special attention should be directed towards these institutionalised older adults as the impact of oral diseases is great and their quality of life is affected.

5.1.2 Demand for treatment

It is disturbing to note that with the high prevalence of oral diseases, in this older adult population, the demand for dental services is very low (29%). Even in the presence of self reported problems (perceived need 88%) the demand was still very low. Similar findings were reported by Kalk et al (1992) that treatment needs in older adults are high, due to bad dentures, missing teeth, periodontal diseases, bad breath and tooth wear but still demand for care appears to be much lower than expected. This suggests that even if the elderly perceive a need for dental care, it does not mean that they will necessarily demand treatment. A high perceived need (want) does not necessarily mean high demand for care.

Gilbert et al (1989) stated that the traditional assumption was that need for dental care can be objectively determined by means of clinical assessment by professionals. But recent surveys have challenged this phenomenon, resulting in a more complex analysis of what constitutes the

dental needs of a community (Tennstedt et al, 1994). Even in the presence of self-reported problems and normative need, demand for care has been lower than would be expected. This is clearly evident in this survey where the normative need is 99% but only (29%) demanded care. The rest felt a need with intentions to demand care at a later stage.

The most cited reason for not demanding care among the elderly in the industrialized world has been a lack of perceived need for dental care. This is not the case in this survey where perceived need is high (88%) and only 12% of the participants lacked perceived need for care. This group of people requires oral health education to raise the level of awareness and understanding of their problems, so that they can perceive a need for care in future. Older people appear to believe that oral problems have less importance compared to other medical conditions and they believe that the problems they are experiencing are due to aging. Demanding dental treatment is also beyond their means financially and functionally.

Findings in this survey suggest that the rate of oral diseases and edentulousness show a back-log of unmet needs. 28% are edentulous but only 18% have dentures. The cause for this discrepancy in demanding care and the backlog of unmet needs may be due to lack of knowledge about oral health care, reduced access to clinics due to diminished mobility, economic factors such as low social economic status, and the decline of income after retirement.

It seems, many of the subjects, after having their last tooth/teeth extracted, did not see the need for dental care and thought that acquiring dentures would eliminate the necessity of any dental treatment in future. Some of the elderly with a full set of dentures did not wear the lower denture due to problems of adapting to the lower denture, many of them complained that they are mobile, caused sores and it was difficult to eat with them. Most of the dentures were unsatisfactory and were very old, (up to 27 years). The elderly have grown to accept unacceptable conditions due to the many barriers they face. Some do not know how to go about demanding care, they are in constant fear of the dentist and afraid of the cost for care.

Most of the institutionalized elderly experience significant barriers to demanding dental treatment, including difficulty in transportation, and need of physical assistance to get to the

dentist. This suggests that there is a need to provide dental care in the institutions using mobile units. This may decrease the burden of disease and increase demand in this population.

5.1.3 Costs for dental care

This survey has revealed that another major barrier to seeking dental care in the elderly is the cost for dental care in general. The perceived need for dentures is high (63%) but with a monthly pension of R520 this need cannot be met. The cost for a full set of dentures in private practice is R400 and this amount to an old person is unaffordable. Most of the participants were ready for any proposed dental treatment as long as it was of no cost to them. This shows that the first common barrier to seeking care is the high cost of dental services.

The University of Western Cape used to provide denture services to the elderly free of charge, but due to financial constraints, they now have to pay. This leads to the problem of dental care being treated as an unaffordable luxury by this age group. The elderly in this survey cited the cost of dental care, and the poor availability and accessibility of dentists, as the major barriers to seeking care. The lack of knowledge on oral health care as a whole, due to lack of education and the cost for dental care played a major role in their decision to seek treatment.

A statistically significant association was established between visits to a dentist and the cost of dental care. It appears that due to the high cost of dental care, older adults tend not to visit the dentist regularly. This finding is similar to that reported by Kail (1996) that the number of annual dental visits are strongly positively correlated to the cost of dental care, although the number of annual physician visits are independent of that factor.

Tennstedt et al (1994) and Ettinger (1997) also found that the elderly did not seek dental care because of the high cost of dental treatment. It is therefore very important to revise the fees for dental treatment with special consideration for the elderly and reduce the cost for dentures as it is the most wanted service by this age group. Free and subsidized dentistry is essential for the elderly. If it can be done for the children why not for the older and functionally dependent adults.

5.1.4 Availability of dental services

The Guguletu dental clinic along NY1 provides dental services to a large percentage of the population including the elderly. This primary health care facility is overburdened by the number of people attending it. The older adult population complained of the long waiting hours when they sought services. Poor accessibility to the clinic is another problem as many of the elderly are totally dependent on public transport.

The dental students attend the clinic to provide care only once in a week. The private dentists in that area are few and their charges unaffordable for the elderly. This problem of availability also hinders the demand for care in this group, even if the perceived need for dental care is high.

Findings reported by Ettinger (1997) showed that there were clear prejudices in the way dentists planned treatment for older patients. In particular they were more likely to extract teeth and less likely to do fillings or fixed prostheses for older patients. This trend is also in Guguletu where the treatment plan has very few options due to lack of resources, limited ability to pay for care, no insurance, and lack of knowledge on the services available.

Therefore there is a need to make oral health services equally accessible to all age groups with greater emphasis on the elderly because they have problems accessing the modern health care system. This will be fulfilling the primary health care principle of equitable distribution of services, by providing the elderly with essential oral health care.

5.1.5 Oral conditions and their relation to gender

The results from this study show similar findings on the relationship between gender and various oral conditions affecting the elderly in many other countries. In this study we found a high prevalence of edentulousness in females compared to males as in the studies done in Italy (Angelillo et al, 1991), New Zealand (Murray et al, 1991) and Canada (Galan et al, 1995). This is due the fact that females seek dental care more often than males and the treatment rendered is usually extractions hence the high rate of edentulousness. There is a need for further research to investigate why women tend to lose their natural teeth at an earlier age than men. It is

contradictory that women may attend more regularly but have the highest edentulous rates. This study has also shown that poor oral hygiene, periodontal diseases,dental caries and root remnants were prevalent in institutionalised older male adults. Males also had a negative attitude towards oral health care and lacked dental awareness. These findings are similar to those reported by Grabowski and Bertram, 1975.

5.2 CONCLUSION

The findings of this survey have revealed very poor oral health in older adults living in Guguletu, as it is revealed by the high levels of edentulism. The demand for care is low although they have problems. There is an unmet need, which is a result of various factors such as, lack of education, accessibility to care, socioeconomic status, dependency and neglect. The elderly have a different perception of their need, compared to what is usually assessed by clinical examination. The most cited perceived need in this survey was the need for dentures. This is because of the problems in chewing, speech and other functional problems. Those with dentures were quite happy with them although some of them were very old and loose.

In spite of these findings the demand for dental care is very low in this age group, although in some cases the dental clinic is nearby. Some have negative attitudes towards oral health care as a whole and perceive that oral health problems are not so important like the other medical conditions they are suffering from. Sometimes they accept inadequate conditions like ill fitting dentures, calculus, bleeding gums, rotten teeth, root remnants and bad breath as part of the aging process. The socio economic status and the previous history of Apartheid and other factors contribute towards these low expectations for oral health care.

Indeed this is a big challenge to oral health workers to change this picture by providing the professional care needed and educating this group on the importance of good oral health, proper hygiene and seeking professional care on a regular basis. At the moment the elderly are not well served by the dental profession especially in the Black townships

Information on the health needs of a population is essential, especially the community perceived needs. It provides a realistic picture of what the community needs in terms of health care (Green, 1994). Although clinical measures of oral health status dominate the scene in the determination of dental needs, this survey demonstrates the importance of including perceived

need as well as normative need in the determination of oral health needs in a particular population group.

At present, the elderly are not well served by the dental profession. This is shown by the levels of oral disease and edentulousness in this age group. This is attributed to dentists extracting teeth instead of motivating the elderly on proper oral hygiene and oral health education. A high tooth loss and absence of fillings in this population suggest that extraction is the only form of treatment available to this community.

Most of the work undertaken at the clinic involves extractions. In most instances the elderly are unaware of the various treatment options available. Even with a little pain they demand extractions, hence a high level of edentulism in this age group. A high dental cost was the reason for not demanding care and for others it could be their attitude towards dental care in general.

The low level of dental care uptake in this survey shows that a high perceived need does not always mean use of dental services, as a number of barriers might be hindering the use of services in old age, but lack of perceived need in some instances may also result in non-utilisation. Despite these discrepancies, it appears that signs and symptoms which were painful were associated with perceived need for care.

This study has revealed a discrepancy between the normative and perceived need, which shows that clinicians often over- estimate what is thought to be the need of a particular population. The gap between perceived and normative need applies for caries, periodontal disease and demand for dentures. However, due to poor oral health, denture status and the extent of ignorance when it comes to oral health care, there is a backlog of unmet needs. The level of unmet needs in this age group shows the neglect by the dental profession and other authorities responsible in providing care to this group.

Accessibility with regards to transport and availability of dentists was another factor which hindered the use of dental services in this age group. The long waiting hours until they get service and the functional dependency, that is, need for assistance to get to the clinic are

barriers that the dental profession need to address when establishing dental services for older adults.

There is also an absence of appropriate prevention strategies such as community oral health education, use of fluorides and water fluoridation. This is reflected by the number of decayed teeth in this group and the level of periodontal disease. The redistribution of services to include the elderly, the poor and those in rural areas is crucial. A concerted effort to bring oral health care to the elderly in Guguletu should be made.

5.3 RECOMMENDATIONS

It is time for the dental profession, planners, the government and society in general to:

- Use baseline information on the oral health needs as it can help group the oral health problems into those that are preventable by simple ways, the type of personnel needed, the scope and skills of the personnel.
- Incorporate perceived need in the overall assessment of oral health needs as this considers a wide range of social factors and the impact of oral diseases in an attempt to determine needs.
- Provide oral health services for the elderly in places where they can easily be accessed such as old age homes and clubs.
- Ensure regular visits by oral health workers to old age homes to provide oral health education, Provide motivation to the elderly to seek regular dental care like the way they seek medical care, oral hygiene instructions, dietary counselling and other oral health promotion activities.
- Revise the cost for dental treatment, such as dentures, so that the majority will be able to afford them.
- Make oral health workers aware of the complex problems the elderly experience and educate them on specific changes and oral health problems that the elderly might be experiencing.

Although this data is not generalizable to other population groups, it provides a glimpse of the oral health status and perceived needs of the elderly in Guguletu. In order to gain more comprehensive data on the oral health needs of the elderly population in South Africa it is important to obtain information from other population groups, and to examine in more detail oral conditions such as root caries, components of periodontal diseases, disorders associated with dentures, type and quality of dentures.

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QUESTIONNAIRE (APPENDIX 1)

DEMOGRAPHIC DATA

1. PERSONAL INFORMATION

1. Registration No ..... | | | |

2. Gender: Male = 1 | |

Female = 2

3. Date of birth ..... | | | |

4. Present or last occupation?.....(specify) |

Skilled = 1

Unskilled = 2

Other = 3

5. Source of income |

State pension = 1

Child support = 2

Other = 3

(Specify) .....

6. Highest educational level: ..... |

Primary school = 1

Secondary school (6-9) = 2

Matric = 3

Post school education = 4

2. GENERAL HEALTH

7. In general, would you say your health is: [ ]

Excellent = 1
Very good = 2
Good = 3
Fair = 4
Poor = 5

8. Are you on any medication at the moment? [ ]

Yes = 1
No = 2
Specify, what Medication? .....

9. Specify, what medical condition?.....

3. ORAL IMPACT ON DAILY PERFORMANCE (OIDP)

10. Do you have problems with your:

Teeth	1
Gums	2
Mouth	3
Jaw	4
Dentures/ false teeth	5
Other (specify).....	6

11a.. What are the major symptoms of these problems (i.e teeth, gums, dentures, mouth)?

Pain	1
Discomfort	2
Limitation in function (eg biting, chewing, speech)	3
Appearance dissatisfaction	4
Other (specify).....	5

11b. Can you specify, which problems of your mouth, teeth or dentures are the cause of the difficulty?

1. Teeth:

tooth ache	1
tooth loss	2
loose tooth	3
colour of teeth	4
position of teeth (crooked/projecting)	5
shape or size of teeth	6
Breaking of teeth	7
Other (specify).....	8

2. Mouth:

deformity of mouth	1
oral ulcer or sore spot (denture related)	2
bad breath	3

taste disturbance	4
unpleasant taste	5
cannot specify	6

(c) Gums:

bleeding gums	1
receding gums	2
gums abscess	3
cannot specify	4

(d) Dentures

mobile denture	1
tight fitting	2
causes sores	3
Other (specify).....	4

12. How often, have you had these problems?

Once or twice a month	1
Once or twice a week	2
3-4 times a week	3
Nearly every day	4

Other (specify).....	5

13. Have you been to see the dentist concerning your problem?

Yes	1
No	2

14. If not, what makes it difficult to visit a dentist?

Fear	1
Costs	2
Time problem	3
Availability of service	4
Lack of confidence in the dental personnel	5
Not happy with previous treatment	6
Other (specify).....	7

15. What makes you go to the dentist?

Check up	1
The dentist sends me a recall	2
When I have dental problems	3
Other (specify).....	4

16. When did you last visit a dentist?

Never	1
One year ago	2
Two years ago	3
Five years ago	4
Other (specify).....	5

17. What sort of treatment did you go for to the dentist/ dental clinic?

Examination and all necessary treatment	1
Preventive care	2
Cleaning and scaling	3
Gum treatment	4
Fillings	5
Extractions	6
Dentures	7
Other (specify).....	8

18. Where do you go for dental service?

None (have never been to a dentist)	1
Private dentist	2
Dental school	3
Medical practitioner	4

Other (specify)	5

19. How do you cover your dental treatment costs?

Pay all cost by myself	1
Medical aid scheme	2
Medical aid and society	3
Child support	4
Other (specify)	5

PROPENSITY OF BEHAVIOUR (ORAL HYGIENE HABITS)

20. How do you clean your mouth?

Tooth brushing	1
Dental flossing	2
Fluoride rinses	3
Water rinses only	4
Denture brush	5
Denture cleanser	6
Other (specify)	7

21. How many times do you clean your mouth per day?

Once	1

Twice	2
More than twice	3

22. Do you think visiting the dentist regularly will improve your oral health?

Yes	1
Probably	2
No	3
I don't know	4

23. Has the dentist or dental personnel or any health worker ever shown you how to clean your teeth/dentist?

Not at all	1
Partly	2
Fully	3
Cannot remember	4

24. Do you smoke cigarettes or use other forms of tobacco?

Yes	1
No	2

25. How many cigarettes do you smoke on average a day?

Cigarettes/day ..... | |

26. Do you think cigarettes are bad for you teeth/health?

Yes	1
No	2

27a. Do you wear/posses a denture (false teeth)?

Yes	1
No	2

27b. When do you wear your denture (False teeth)?

Always	1
Sometimes	2
At meal times	3
At night	4
Day time only	5
Never	6

28. How old is the denture? _____ (Years)

29. Is it an upper, lower or a full set of dentures?

Upper	1
Lower	2
Full set	3

30. Do you think you need a denture/ false teeth? (For edentulous respondents without dentures)

Yes	1
No	2

31. When were the last of your teeth taken out?

less than a year ago	1
Longer than a year ago	2
don't remember	3
Other (specify).....	4

32. What do you think about your oral health? (probe)

Important	1
Less important compared to the other conditions	2
Not important	3

ORAL HEALTH STATUS EXAMINATION FORM (appendix 2)

CLINICAL EXAMINATION

1) Extra oral examination:

Normal extra oral appearance	1
Abnormalities of upper and lower lip	2
Enlarged lymph nodes (head and neck)	3
Ulcerations, sores, erosions and fissures	4
Other swellings of the face and jaws	5

Specify	6

2) Intra oral examination (oral mucosa):

Normal	1
Malignant tumour (oral cancer)	2
Ulcerations	3
Stomatitis	4
Abscess	5
Hyperplasia	6

3) Denture possession and type:

No denture	1
Partial denture	2
Full removable denture	3
Other (specify)	4

4) Stability of denture:

Not stable	1
Stable	2

5) Denture quality:

Satisfactory	1
Unsatisfactory	2

6) Treatment indicated :

No treatment needed	1
New denture	2
Repair of denture	3
Rebase	4
Oral surgical procedure	5
Oral medicine	6
Conservation	7
Scaling and root planing	8

7) Dentition and gingival status:(modified WHO oral health assessment form)

MAXILLA										MANDIBLE				
Tooth & Gingiva Status		**Bleeding Gingiva**	**Gingival Recession**	**Pockets > 4 mm**	**Calculus**	**Mobility**	**Decayed R/C**			**Tooth & Gingiva Status**		**Bleeding Gingiva**	**Gingival Recession**	**Pockets > 4 mm**
18										38				
17										37				
16										36				
15										35				
14										34				
13										33				
12										32				
11										31				
21										41				
22										42				
23										43				
24										44				
25										45				
26										46				

27									
28									

47				
48				

Appendix 2 (Part B)

University of Western Cape
Faculty of Dentistry
Oral Health Centre
Private Bag XO8
7785 Mitchells Plain.

Manager
Ekumphuleni home for the aged
Private bag 11
Guguletu 7750

Dear Sir/ Madam,

RE: PERMISSION TO CONDUCT A STUDY AT EKUMPHULENI HOME FOR THE AGED

I am a post graduate student, studying at the university of Western Cape. Doing a masters degree in Dental Public Health, I am required to do a research project as part of the requirement.

I wish to carry out my research on the **Oral health status and perceived oral health needs in older adults,** at Ekumphuleni institution starting at the end of August 1999.I will be visiting the institution twice a week from 8.30 am to 2.30 pm.

I would be glad to be granted the permission to conduct the research at the institution.

Thank you for your assistance.
Kind regards
Dr. Kokuhumbya Kazaura.

Appendix 2 (Part A)

CONSENT FORM

Dear Participant,

I am Dr. Kokuhumbya Kazaura, masters student at the university of Western Cape.
I am carrying out a study/survey on the Oral health status and the perceived needs for dental care in institutionalised older adults at Ekumphumleni.

The survey will consist of a questionnaire and a clinical examination of the oral cavity, nothing invasive will be carried out.

I am therefore asking if you wish to participate in this study. Please sign below to signal your consent.

I _____ Agree to participate in this study, signature _____,
Signed at _____ This _____ Day of _____ 1999.

Thank you, in advance.

Dr. Kokuhumbya Kazaura.