KNOWLEDGE, ATTITUDE AND PRACTICES
TOWARDS PREVENTIVE DENTISTRY AMONG
DENTISTS IN NAIROBI

MAUNDU CATHERINE NTHENYA
BDS III, V28/1949/2010

A research Project submitted in partial fulfillment of the degree of Bachelor of
Dental Surgery (BDS) of the University of Nairobi

2013
Declaration

I, Maundu Catherine Nthenya, declare that this is my original work and it has not been submitted to any other institution for award of any degree whatsoever.

Signed……………………………. Date……………………………. 
SUPERVISORS’ APPROVAL

This proposal has been submitted with approval of my supervisors.

SUPERVISORS:

INTERNAL: DR MUA B.N. BDS MPH PgD (STI) [NBI] MBA (ST. PAUL’S)

Department of Periodontology/ Community and Preventive Dentistry

School of Dental Sciences.

University of Nairobi

Signed…………………………………Date………………………

EXTERNAL: DR ALUMERA HUDSON: BDS (NBI)

Department of Periodontology/ Community and Preventive Dentistry

School of Dental Sciences.

University of Nairobi

Signed…………………………………Date………………………
AKNOWLEDGEMENT

I would like to acknowledge my supervisors Dr Mua and Dr Alumera for their support throughout the entire project. Your effort since the beginning of the project to its completion is highly appreciated.

I also appreciate my parents MR and MRS Maundu for always believing in me and giving me advice and financial support whenever it was needed.

I would also like to recognize the efforts made by my friends most of all Sam Iliwa and others especially in distributing the questionnaires.
DEDICATION
I would like to dedicate this project to my mother, my role model Mrs. Rodah Mwikali for being the strongest person I know and the perfect example of an independent African woman.
Table of contents
Declaration .................................................................................................................ii
Approval ................................................................................................................... iii
Acknowledgement .................................................................................................... iv
Dedication .................................................................................................................. v
Table of contents ..................................................................................................... vi
list of figures and tables ........................................................................................... viii

1.0 INTRODUCTION AND LITERATURE REVIEW ............................................. 1

1.1 Introduction ......................................................................................................... 1

1.2 literature Review .................................................................................................. 4

2.0 PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND VARIABLES .............................................. 6

2.1 PROBLEM STATEMENT ..................................................................................... 6

2.2 Justification of the study ..................................................................................... 6

   2.3.1 Main objective .............................................................................................. 6

   2.3.2 Specific objectives. ....................................................................................... 6

2.4 Study Variables .................................................................................................... 7

3.0 MATERIALS AND METHODS ........................................................................... 8

3.1 STUDY AREA ...................................................................................................... 8

3.2 STUDY POPULATION .......................................................................................... 8

3.3 STUDY DESIGN ................................................................................................... 8

3.4 SAMPLING METHODS ....................................................................................... 8

   3.4.1 Sample Size .................................................................................................. 8

   3.4.2 SAMPLING PROCEDURE ......................................................................... 9

3.5 INCLUSION CRITERIA ......................................................................................... 9

3.6 EXCLUSION CRITERIA ......................................................................................... 10

3.7 DATA COLLECTION AND TECHNIQUE TOOLS ........................................... 10

   3.7.1 DATA COLLECTION METHODS ............................................................. 10

   3.7.2 DATA ANALYSIS AND PRESENTATION ............................................. 10
3.8 ETHICAL CONSIDERATION................................................................. 10
3.9 PERCEIVED BENEFITS................................................................. 10

4.0 RESULTS......................................................................................... 11

4.1 Duration of practice................................................................. 11
4.2 Type of practice........................................................................... 12
4.3 Highest level of education attained.......................................... 13
4.4 KNOWLEDGE OF PREVENTIVE DENTISTRY.......................... 15
  4.41 Caries related.......................................................................... 15
  4.42 Fluoride related....................................................................... 15
4.5 ATTITUDE TOWARDS PREVENTIVE DENTISTRY.................... 16
4.6 PRACTICES CARRIED OUT......................................................... 17

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS......... 18
  5.1 Discussion.................................................................................. 18
  5.1.1 Knowledge towards preventive dentistry.............................. 18
  5.1.2 Attitudes towards preventive dentistry................................ 19
  5.1.3 Practices towards preventive dentistry................................. 20
  5.2 Conclusion................................................................................ 20

References ..................................................................................... 21
APPENDIX ..................................................................................... 25
LIST OF TABLES.

Figure 1.0 age distribution in years..................................................11

Figure 2.0 type of practice.................................................................12

Figure 3.0 Highest level of education attained...............................13

LIST OF TABLES

Table 1 knowledge towards preventive dentistry (caries related)…..14

Table 2 knowledge towards preventive dentistry (fluoride related) ….15

Table 3 attitude towards preventive dentistry.................................16

Table 4 practices towards preventive dentistry...............................17
<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>FULL NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>UONDH</td>
<td>University of Nairobi Dental Hospital</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>UON</td>
<td>University of Nairobi</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>ADA</td>
<td>American Dental Association</td>
</tr>
</tbody>
</table>
SUMMARY

Background

Preventive dentistry is a dynamic aspect of dentistry which concentrates on the practices and procedures that ensure the prevention initiation, propagation and progression of dental diseases. Nairobi which is the capital city of Kenya a developing country has a population of the majority of dentists in the country. This study aims to assess their, knowledge attitude and practices in Preventive Dentistry.

Objective

The main objective of this study was to investigate knowledge, attitude and practices towards preventive dentistry among dentists in Nairobi County.

Study Design

This was a cross sectional descriptive study.

Study Population and Study Area

The study was carried out among Dentists in Nairobi County. This was done among those in both private and public sector in Nairobi County.

Materials and methods

Data was collected using a self-administered questionnaire. The participants were practicing dentists from Nairobi County. The questionnaire was filled by subjects who met the inclusion criteria. The variables such as sex, age, modules and level of education were be recorded.
RESULTS

A total of sixty seven respondents participated in the study. Of these 46 (68.7%) were males and 21(31.3%) were females. The age ranged between 24 -53 years with a mean of 34.12 years. Across all the age groups the males were more compared to the Females. Most of the participants were in the group between 20- 29 years. On aspects of knowledge attitude and practices majority of the responses were positive.

Conclusion

From this study it can be concluded that dentists in Nairobi County had vast knowledge towards preventive dentistry and they carry out most of the practices involved in preventive dentistry. Their attitude towards preventive dentistry was highly commendable since most of them have a positive attitude towards this field

Recommendations

Dentists should encourage their patients to carry out procedures towards preventive dentistry so as to reduce the prevalence of many dental diseases.

There’s need to stress on the importance of fluoride use especially in low fluoride areas.
1.0 INTRODUCTION AND LITERATURE REVIEW

1.1 Introduction

Preventive dentistry is an aspect of dentistry which concentrates on practices and procedures that ensure dental diseases do not occur or progress to a more severe form. It includes two aspects of dental care, both performed to help patients avoid dental disease or to target them in their early more treatable stages. In part, it is the oral hygiene care performed by the patient at home. Preventive dentistry also encompasses what is done by the dental staff in the clinic to help patients maintain health in the oral cavity. In either case, the objective is to stop the development of oral disease or to find it at an early stage. Dental health professionals most often look for early signs of periodontal disease, dental caries and other changes in the soft tissue of the mouth that could lead to oral pathology.

Studies show that the main cause of majority of the dental diseases is plaque. It is a biofilm that contributes to two oral diseases: dental caries and periodontal disease. It is a complex community of microorganisms that have a negative surface charge that attaches to the host surface enamel or gingiva. The initial layer or formation of plaque is called the acquired pellicle. This layer will reform within two hours after removal and will also form on artificial prosthesis, such as dentures and orthodontic brackets. Studies show that when plaque is not removed from the oral cavity it may mineralize and become calculus. This mineralized formation is formed by calcium and phosphates in the saliva and it has been found that tobacco use accelerates the formation of calculus however; recent research studies link plaque as the contributing factor to periodontal disease rather than calculus. Daily removal of biofilm is critical to reduce oral disease.

Both manual and power toothbrushes can effectively remove plaque if patients use correct technique and brush for an adequate time. Certain toothbrush designs, however, provide more effective removal than others. Studies show oscillating-rotating power brushes can be more effective at plaque removal than manual brushes. Power toothbrushes were shown to be as safe to use as manual toothbrushes if used properly.

There are several manual tooth brushing techniques. They include the horizontal scrub, Bass, Still man,
Charters, and Fones, to name a few. The most popular method that an uneducated patient uses is the horizontal scrub. Unfortunately, gingival and enamel damage can occur with aggressive strokes and too firm of bristles. The Still man method is used for massage and stimulation of the gingiva with a 45 degree angle of the bristles and a vibratory/pulsing method. The Charter method also involves a 45 degree angle with the bristles and a rotary or vibratory motion forcing the bristles inter-proximally. The Charter method can be recommended for orthodontic patients to clean orthodontic brackets and bands.

There are many powered toothbrushes available on the market. There are also less expensive battery-powered toothbrushes available for patients to try. Studies have shown powered toothbrushes are an excellent tool for all patients, particularly those with low manual dexterity or physical limitations. The larger handle is ideal for patients who cannot grip the smaller manual toothbrush handles, such as patients with arthritis or stroke victims. The patient should be encouraged to try both manual and powered toothbrushes and determine which is best for them.

Whichever toothbrush is used, the patient should be taught to remove plaque in a sequential order when brushing to make sure they do not skip any surface areas of the enamel or exposed cementum.

**Dental floss:** There are many different types of floss in the market: waxed or Un waxed, flavored for example with mint cinnamon or bubblegum, with floss holders or floss threaders. There are two flossing methods: One is the circle or loop method and the other is the spool method. The circle or loop method is preferred for children or any patient with low manual dexterity. The patient uses the thumb and index finger of each hand in various combinations to guide the floss inter-proximally through the contacts. This aids in removal of interdental plaque and food debri.

**Toothpicks or Wooden/Plastic Triangular Stick:** this aid greatly in interdental cleaning in areas which can’t be accessed by dental floss or by people who are not able to afford one. Studies show that patients with large diastemas or food impaction areas benefit more from the use of a tooth pick when removing plaque and food debri.

**Interproximal and Uni-tufted Brushes:** These are small interproximal brushes attached to handles and are used for large spaced interproximal areas and for orthodontic patients to use between their brackets to remove debris. There are a variety of brushes available, including travel sizes for pockets
and purses. The brushes are tapered for easy access to difficult areas and patients adapt easily.

**Scaling and polishing** has been shown to be a preventive measure for periodontal diseases. It has been shown to reduce the rate of disease progression greatly since it involves the removal of plaque and calculus. [6]

**Fluorides:** Both community water fluoridation, known as systemic or pre-eruptive fluoride and topical fluoridation also known as post-eruptive fluoride have proven to be an important mechanism in preventing dental caries in the United States since the 1950. Through studies researchers have discovered that not only has water fluoridation contributed to the decline in dental caries, but also the post-eruptive effect of fluoride has played an even more vital role in reducing dental caries. [7] Community water fluoridation prevents dental caries in areas with low natural fluoride even though it could be supplemented by fluoride from other sources such as tooth paste, rinses and other topical applications in the dental office. In some areas in Kenya for example Nakuru experience excess fluoride in the naturally available water which is a great problem the people due to its negative effects.

**Sealants:** These are flowable materials that are applied on deep pits and fissures to prevent attack and progression of dental caries. [8] They are applied on deep pits and fissures, teeth of handicapped people or other people who are not able to brush well and also on teeth of people with rampant caries. They should also be placed on the teeth of adult patients if there is evidence of existing or impending caries susceptibility, such as a diet excessive in carbohydrates or as a result of a drug or radiation-induced xerostomia.

Another aspect of preventive dentistry is patient education, motivation and visits to the dentist to ensure that any new clinical findings are detected and dealt with. During this visits bitewing radiographs are recommended to rule out interproximal caries. [9]
1.2 Literature Review

Knowledge practices and attitude towards preventive dentistry has been extensively studied and documented among non-African populations. Developing countries like Kenya have experienced a greatly growing demand for preventive services in dental care. Since the early 1970s several aspects of preventive dentistry have been practiced country wide and currently they are rapidly gaining a lot of popularity especially among the middle class society.[10]

A study carried out by CDC show that most dental diseases are preventable when certain procedures are observed. There are numerous dental conditions the commonest is dental caries affecting more than 50% of the adult population and 60% in children according to a study carried out by PEW charitable trust in Us between 1994 and 2004. Second commonest dental condition is the disease of the periodontium/periodontal disease which is divided into two broad groups: gingivitis and periodontitis. Other dental disease could be pathological in origin for example vesiculobullous lesion or as a result of infections for example mumps. Others could be due to trauma.

Philips Kerr et al (1998) examined the reasons for tooth loss and found out that slightly more than 51% of the teeth were extracted due to periodontal disease, 35% due to caries and 9.8% due to combination of the two. This information definitely impacts the practice of dental hygiene and the need to educate patients on proper brushing procedures in order to prevent such diseases.

In a study by Stuart Segelnick (2000) on the techniques and effectiveness of dental floss concluded that, it is the most widely recommended inter proximal aid, yet it is the most poorly practiced. The understanding of individual habits and techniques should help the dentist develop and direct an effective oral hygiene program. The program should include constant reinforcement to teach the essentials of flossing especial on the inter proximal areas which are hard to clean using a conventional tooth brush. [11]Studies also show that scaling and polishing reduces greatly the occurrence and severity of periodontal diseases. This is due to the removal of calculus which is plaque retentive the main cause of periodontal diseases. During polishing, there is use of prophylaxis paste which has beneficial effects to the patient since it has several useful constituents.

Both community water fluoridation [known as systemic or pre-eruptive fluoride] and topical fluoridation [also known as post-eruptive fluoride] have proven to be an important mechanism in
preventing dental caries in the United States since the 1950s.\[12\] Through studies, researchers have discovered that not only has water fluoridation contributed to the decline in dental caries, but also the post-eruptive effect of fluoride has played an even more vital role in reducing dental caries. Community water fluoridation has shown greatly to prevent dental caries in areas with low natural fluoride even though it could be supplemented by fluoride from other sources such as tooth paste, rinses and other topical applications in the dental office. In some areas in Kenya for example Nakuru experience excess fluoride in the naturally available water which is a great problem the people due to its negative effect. The ADA recommends that for patients with active and rampant caries topical fluoride applications should be done more frequently: on a quarterly basis regardless of whether the patient ingests optimally fluoridated water

Sealants By the late 1970s and early 1980s, the clinical data on sealants and caries prevention was very positive. A four-year clinical evaluation of sealant comparing sealed with non-sealed teeth demonstrated an overall 43% decrease in the prevalence of caries effectiveness with significantly better sealant retention on premolars (84%) than molars (30%) A later, seven-year study by Mertz- Fairhurst and co-workers reported a 55% reduction in caries rate for the sealed teeth versus the unsealed teeth.\[13\]

Patients’ education on preventive dentistry is really important in ensuring prevention of dental diseases. Peterson et al in their study in Romania found out that dental knowledge among the population was very poor and that despite the availability of dental services only 24% of the population had attended the clinic and this was mainly due to ignorance\[14\]. In a study carried by Frames ES et al to investigate the recommendations by dentist towards preventive dentistry in New York found out that 73% of the dentists recommended that people should at least visit the dentist twice a year to be screened for any new carious lesions or any development of periodontal disease or any other oral pathology.
2.0 PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND VARIABLES.

2.1 Problem statement
Dentists play a vital role in treatment and prevention of oral diseases. Their role in prevention is important as they are an important source of knowledge to patients. The knowledge attitudes and practices of dentists towards preventive care may influence those of the patients.

Despite the acknowledged role of dentists in prevention of dental diseases there is scarcity of data on attitudes practices and knowledge towards preventive dentistry. Therefore by assessing the knowledge, attitude and practice among dentists in Nairobi, the investigator sets to assess the existing knowledge gap therefore a need for improvement. This will give a clear picture towards perception of preventive dentistry.

2.2 Justification of the study
There is limited data on the level of knowledge attitude and practices towards preventive dentistry since few studies worldwide have been done. The results obtained from the study will highlight the need to apply diverse methods used in preventive dentistry and also change their attitude positively towards it. Information obtained may also be used as a reference in future related studies.

2.3 Objectives

2.3.1 Main objective
The main objective was to investigate knowledge, attitude and practices towards preventive dentistry among dentists in Nairobi.

2.3.2 Specific objectives.
The specific objectives were;

1. To assess the level of knowledge on preventive measures in dentistry among dentists in Nairobi county.
2. To find out the practices of dentists in Nairobi in preventive dentistry
3. To assess the attitude of dentists in Nairobi towards preventive dentistry.
### 2.4 Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social -Demographic variables</td>
<td>Age- number of years</td>
</tr>
<tr>
<td></td>
<td>Gender: male or female</td>
</tr>
<tr>
<td></td>
<td>Type of practice: Private or Public</td>
</tr>
<tr>
<td>Independent variables</td>
<td>Academic qualifications: general practitioner or specialist</td>
</tr>
<tr>
<td></td>
<td>Number of years in practice</td>
</tr>
<tr>
<td></td>
<td>Knowledge towards preventive Dentistry</td>
</tr>
<tr>
<td></td>
<td>Attitude towards preventive dentistry.</td>
</tr>
<tr>
<td>Dependent variables</td>
<td>Practice of preventive dentistry.</td>
</tr>
</tbody>
</table>
3.0 MATERIALS AND METHODS

3.1 Study area
The study was carried out among Dentists in Nairobi County. This was done among those in both private and public sector in Nairobi.

Nairobi is the capital city of Kenya and it’s the biggest town in East Africa. It mainly comprises of urban population with a day time population of approximately four million people and night population of two million people.

3.2 Study population
Study population comprised of selected practicing dentists in Nairobi County.

3.3 Study design
This study included collection of data from the participants then followed by data analysis. Therefore this was descriptive cross sectional study.

3.4 Sampling methods

3.4.1 Sample Size
Sample size was computed using the following fisher’s formula:

\[ N = \frac{Z^2 P(1-P)}{C^2} \]

Where;

\[ N= \text{sample size} \]
\[ Z= \text{z value according to the confidence level chosen.} \]
\[ P= \text{prevalence} \]
\[ C= 1-\text{Confidence interval} \]

Using a confidence level of 95 % Z value of 1.96 and a prevalence of 50% \[^{15}\]
\[ N = (1.96)^2 \times 0.5(1-0.5) \]

\[ (1-0.95)^2 \]

\[ N = 384 \]

If \( N \) is less than 10,000

\[ N_f = n \]

\[ 1 + (n/N) \]

Where \( n_f \) is the desired population size

\( n = 384 \)

\( N \) is an estimate of the population size which is 80

\[ n_f = 384 \]

\[ 1 + (384/80) \]

\[ n_f = 66.207 \] rounded off;

Therefore the minimum sample size was 67 dentists

3.4.2 Sampling procedure

Non probability convenience sampling was employed. A list of registered and practicing dentists from the Kenya Medical Practitioners Pharmacists and Dentist Board and also from the Kenya Dental Association membership list was used to map out dentists from Nairobi County for easier accessibility.

The dentists participating filled questionnaires which provided the data analyzed.

3.5 Inclusion criteria.

Dentists in Nairobi both public and private sector

Those who give their consent

Practicing and registered Dentists
3.6 Exclusion criteria
Those who did not give their consent.
Dentists who were not registered.
Those who did not practice Dentistry.

3.7 Data collection and technique tools

3.7.1 Data collection methods
Data was collected via a self-administered questionnaire. The participants were practicing dentists from Nairobi County. The questionnaire was filled by subjects who meet the inclusion criteria. The variables such as sex, age, and level of education were recorded.

3.7.2 Data analysis and presentation
Data was entered coded and analyzed using SPSS version 13.0 - a computer application package. Descriptive statistics to note trends and patterns was done by way of percentages, means and range. Interrelationship between variables was analyzed using the Chi square statistic. Data was presented in form of tables, graphs, bar charts and histogram depending on the type of data whether categorical or discrete.

3.8 Ethical consideration
Authority to conduct the research was sought from the KNH/UON ethics and research committee to whom an earlier proposal was presented.
Informed consent was sought from the study participants where they consented to the study by a written and signed consent after an explanation was given to them by the principal investigator.
The study did not pose any health risk to the participants since data was obtained through self-administered questionnaires.
All information collected was treated with utmost confidentiality.

3.9 Perceived benefits
The information gathered could be used to develop strategies for use in improving the use of preventive dentistry among dentists and future dental practitioners.
This study is in partial fulfillment of the Bachelor of Dental Surgery in the University of Nairobi.
CHAPTER FOUR: RESULTS

4.1 Social demographic characteristics.
A total of 67 respondents participated in the study. Of these 46 (68.7%) were males and 21(31.3%) were females. The age ranged between 24 -53 years with a mean of 34.12 years. The males were slightly younger Mean 34.17 years. Than females mean 34.24 Years. Across all the age groups the males were more compared to the Females. Most of the participants were in the group between 20- 29 years.

![Age distribution in years](image)

Figure 1.0 Age distribution in years.

4.2 Duration of practice
Out of the 67 participants, 22(32.8 %) had practiced for less than five years, 20(29.9%) for between five and ten years, and 9(13.4%) between ten and fifteen years and16(23.9% ) more than fifteen years.
4.3 Type of practice

Of the 67 respondents, 15 (22.4%) were in Private Practice, 27 (40.3%) were employed by the Government, and 4 (6.0%) were employed by faith based organizations, 18 (26.9%) by the University of Nairobi, 1 (1.5%) by ministry of Defense.

Figure 2.0 type of practice.
4.4 Highest level of education attained.
Out of the 67 dentists 43 (64.2%) had only completed undergraduate course, 22 (32.8%) had studied up to masters level while only 2 (3.0%) had PHD.

Figure 3.0 Highest level of education attained.
4.5 Knowledge on factors that impact on preventive Dentistry.

4.51 Caries Related

Table 1.0 shows the respondents knowledge on the role of factors that influence the occurrence of dental diseases. The 67 respondents were asked questions whose responses were Fully agree, Agree, Don’t know, Disagree, or Fully Disagree a total of 268 responses were obtained. Out of the 268 responses majority of the respondents either agreed 151 (53.93%) or fully agreed 97(34.62%) with the fact that frequency of sugar intake, use of fissure sealants, restored teeth are more likely to be lost than sound tooth and that a white or brown lesion visible on a tooth surface has penetrated to the enamel of that tooth while only a few of the respondents Disagreed 12(4.28%) and Fully Disagreed 97(34.2%).

Table 1: Knowledge towards preventive dentistry (caries related.)

<table>
<thead>
<tr>
<th></th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Don’t know</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of sugar intake</td>
<td>1(1.5%)</td>
<td>3(4.5%)</td>
<td>3(4.5%)</td>
<td>37(55.2%)</td>
<td>23(34.3%)</td>
</tr>
<tr>
<td>contributes more to caries than amount of sugar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of fissure sealants</td>
<td>2(3.0%)</td>
<td>3(4.5%)</td>
<td>0(0%)</td>
<td>31(46.3%)</td>
<td>31(46.3%)</td>
</tr>
<tr>
<td>Restored tooth is more likely to be lost than a sound tooth due to caries</td>
<td>2(3.0%)</td>
<td>2(3.0%)</td>
<td>3(4.5%)</td>
<td>34(50.7%)</td>
<td>26(38.8%)</td>
</tr>
<tr>
<td>A white or brown lesion visible on a tooth surface has penetrated all the way to enamel.</td>
<td>3(4.5%)</td>
<td>4(6.0%)</td>
<td>6(9.0%)</td>
<td>37(55.2%)</td>
<td>17(25.4%)</td>
</tr>
<tr>
<td><strong>OVERALL</strong></td>
<td>8(2.8%)</td>
<td>12(4.28%)</td>
<td>12(4.28%)</td>
<td>139(53.93%)</td>
<td>97(34.62%)</td>
</tr>
</tbody>
</table>
4.52 Fluoride related

On the level of knowledge about the role of fluoride in preventive dentistry, majority of the respondents agreed or fully agreed that: fluoridation of drinking water is effective in reducing dental carries and also rinsing teeth with less water after brushing increases the effect of fluoride in the toothpaste while most of the respondents disagreed that fluoride tooth paste is more important than the brushing technique.

Table 2: Knowledge towards preventive dentistry (fluoride related).

<table>
<thead>
<tr>
<th></th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Don’t know</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoridation of water is important in preventing dental caries</td>
<td>3(4.5%)</td>
<td>3(4.5%)</td>
<td>5(7.5%)</td>
<td>24(35.8%)</td>
<td>32(47.8%)</td>
</tr>
<tr>
<td>Rinsing teeth with less water increases the effect of fluoride.</td>
<td>3(4.5%)</td>
<td>4(6.0%)</td>
<td>6(9.0%)</td>
<td>37(55.2%)</td>
<td>17(25.2%)</td>
</tr>
<tr>
<td>Use of fluoride is more important than the brushing technique.</td>
<td>20(29.9%)</td>
<td>27(40.3%)</td>
<td>10(14.9%)</td>
<td>6(9.0%)</td>
<td>4(6.0%)</td>
</tr>
<tr>
<td>OVERALL</td>
<td>26(12.9%)</td>
<td>34(16.9%)</td>
<td>21(10.4%)</td>
<td>67(33.4%)</td>
<td>53(26.4%)</td>
</tr>
</tbody>
</table>
4.6 Attitude towards preventive dentistry

On the community related attitudes, respondents were asked if they thought that oral hygiene instructions were important 63(94%) said yes while only 4(6%) said no and if they would recommend community water fluoridation in low fluoride areas 63(94%) said YES and 4(6%) said no.

On the dentist related attitudes, majority of them said they would recommend application of fissure sealants, use of topical fluorides and dentifrices, use of dental floss and they would advocate for prophylaxis polishing as shown from the table below.

Table 3.0: Attitudes towards preventive dentistry (dentist related)

<table>
<thead>
<tr>
<th>Attitude</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of fissure sealants</td>
<td>65(97%)</td>
<td>2(3%)</td>
</tr>
<tr>
<td>Use of topical fluorides</td>
<td>64(95.5%)</td>
<td>3(4.5%)</td>
</tr>
<tr>
<td>Use of dental floss</td>
<td>66(98.5%)</td>
<td>1(1.5%)</td>
</tr>
<tr>
<td>Prophylaxis polishing</td>
<td>43(64.2%)</td>
<td>24(35.8%)</td>
</tr>
</tbody>
</table>
4.7 Practices carried out.

Table 2.0 shows practices carried out by the respondents towards preventive dentistry. Majority of the respondents carried out practices such as Oral hygiene Instructions, Fissure sealants, Scaling and Polishing and Biannual checkups by while only a few did not carry out the practices as shown in the table below.

**Table 4.0 Practices towards preventive dentistry**

<table>
<thead>
<tr>
<th>practice</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral hygiene instructions</td>
<td>56(83.6%)</td>
<td>11(16.4%)</td>
</tr>
<tr>
<td>Use of topical fluorides</td>
<td>46(68.7%)</td>
<td>21(68.7%)</td>
</tr>
<tr>
<td>Application of fissure sealants</td>
<td>42(62.7%)</td>
<td>25(37.3%)</td>
</tr>
<tr>
<td>Prophylaxis polishing</td>
<td>49(73.1%)</td>
<td>18(23.9%)</td>
</tr>
<tr>
<td>Biannual checkups</td>
<td>37(55.2%)</td>
<td>28(41.8%)</td>
</tr>
</tbody>
</table>
CHAPTER FIVE; DISCUSSION CONCLUSION AND RECOMMENDATIONS

5.1 DISCUSSION

This study was carried out to assess the Knowledge Attitude and Practices towards preventive dentistry among dentists in Nairobi County. Dentists’ knowledge of and attitudes towards preventive dentistry and oral health care provide the framework of their professional work. Since dentists are persons who convey evidence based knowledge of oral health care to the public, they greatly influence their patient’s oral related behavior. Dentists need to update their practices according to the best available scientific evidences.

5.1.1 Knowledge towards preventive dentistry

The results of the present study showed that dentists in Nairobi County were generally aware of preventive dentistry practices by 36 (53.93%) such as; use of fissure sealants, effect of sugar and community water fluoridation as well as use of fluoride based dentifrices. This is in line with a similar study carried out among dentists in Iran [16] On the other hand; deficiencies were evident in the dentist’s knowledge of the role of fluoride in some aspects of caries initiation and progression. Like the Iranian dentists, they underestimated the role of fluoride in carries prevention in comparison to brushing technique. This is contrary to the opinion of a group of experts [17] that fluoride plays an important role in prevention. Furthermore, new recommendations suggest that rinsing after brushing should be minimized so that teeth can maximally benefit from the fluoride in tooth paste. Lack of attention on the role of fluoride in preventive dentistry especially dental carries in dental education could attribute to their response and this calls for putting more emphasis on this subject in the Dental curricula and in continuing education.
5.1.2 Attitudes towards preventive dentistry

Attitudes are influenced by beliefs and values, personal needs, and behavior. Accordingly, dentists’ attitudes vary according to their background and professional factors. In the present study, however, they all had a positive attitude towards practices of preventive dentistry such as use of fissure sealants, use of topical fluorides, use of dental floss and prophylaxis and polishing. Majority of the respondents had a positive attitude towards preventive dentistry and more than 43 out of the 67 respondents (64.2%) responded yes to the questions asked. In a study carried out by Stuart Segelnick (2000) [11] on the importance of preventive measures in dentistry he found out that most of the dentists involved in the study 126(55%) recommended practices of preventive dentistry.

5.1.3 Practices towards preventive dentistry

From the study the participants carried out preventive dentistry practices such as scaling and polishing, oral hygiene instructions, fluoride therapy and biannual checkups. The least done practice of preventive dentistry was biannual checkups 37(55.2%) with the other practices scoring more than 60%. This is in line with a study carried out among dentists in Iran [17] which demonstrated the increased practice of preventive dentistry among modern day dentists.
5.2 CONCLUSION

Based on the findings of this study, the following was concluded:

1. Dentists in Nairobi County had vast knowledge towards preventive dentistry.
2. Dentists in Nairobi County carried out most of the practices involved in preventive dentistry.
3. Their attitude towards preventive dentistry was highly commendable since most of them had a positive attitude towards it.

5.3 Recommendations

Following the findings of this study, the following was recommended:

1. There’s need to stress on the importance of fluoride use especially in low fluoride areas.
2. More studies should also be done in this field since only a few studies are available in the developed countries.
3. Dentists should encourage their patients to carry out procedures towards preventive dentistry so as to reduce the prevalence of many dental diseases.
REFERENCES


APPENDIX

APPENDIX I: BUDGET

<table>
<thead>
<tr>
<th>Item</th>
<th>Price (in Kenya shillings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationery</td>
<td>1000.00</td>
</tr>
<tr>
<td>Typing and printing proposal</td>
<td>1000.00</td>
</tr>
<tr>
<td>Photocopying of the questionnaires</td>
<td>1000.00</td>
</tr>
<tr>
<td>Typing and printing the report</td>
<td>1500.00</td>
</tr>
<tr>
<td>Miscellaneous exp.</td>
<td>1500.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6000.00</td>
</tr>
</tbody>
</table>

APPENDIX II: SCHEDULE OF ACTIVITIES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal writing</td>
<td>March-June</td>
</tr>
<tr>
<td>Submission to the ethical board</td>
<td>July-August</td>
</tr>
<tr>
<td>Data collection</td>
<td>September</td>
</tr>
<tr>
<td>Data analysis</td>
<td>September</td>
</tr>
<tr>
<td>Report writing</td>
<td>September-October</td>
</tr>
<tr>
<td>Data presentation</td>
<td>October</td>
</tr>
</tbody>
</table>
APPENDIX III; CONSENT FORM

KNOWLEDGE ATTITUDE AND PRACTICES TOWARDS PREVENTIVE DENTISTRY AMONG DENTISTS NAIROBI COUNTY.

I, MAUNDU CATHERINE, a level three bachelor of Dental Surgery student at the University of Nairobi, currently conducting a research on knowledge, attitude and practices towards preventive Dentistry among dentists in Nairobi county wishes to request you to participate in the study that will form part of my degree course. You will participate by filling the attached questionnaire after signing this consent form. Participation is voluntary and utmost confidentiality is assured for information given.

You are free to participate or refuse to take part in the study without any victimization. The study will be beneficial in that it will equip qualified dental officers and clinical ear students with better understanding of knowledge attitude and practices towards preventive dentistry. The study will also form a reference for future related studies. Authority to conduct the study was sought from KNH/UON Ethics and Research Committee to whom the proposal was presented. Permission to conduct the research was sought from the Department of conservative and Prosthetic dentistry where the research is based.

I would therefore appreciate your consent by signing below.

I,………………………………………… confirm that I have understood the relevant parts of the study and hereby give consent to participate.

For clarification and enquiry please contact:

1. The KNH/UON ethics department
   Email address; Uonknh_erc@uonbi.ac.ke
   Phone number; 0202726300

2. Dr Mua B.N
   Email address; benardmua@uonbi.ac.ke
   Phone number; 254722278295

3. Dr Alumera Hudson
   Email address; alumera@uonbi.ac.ke
APPENDIX III

TO DETERMINE KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS PREVENTIVE DENTISTRY AMONG DENTISTS IN NAIROBI

Personal Details

Please tick where appropriate.

1. Gender:
   i. M [    ]
   ii. F [    ]

2. Age:

3. Number of years in practice
   i. Less than 5 [    ]
   ii. Between 5 and 10 [    ]
   iii. Between 10 and 15 [    ]
   iv. More than 15 years [    ]

4. Type of practice
   i. Private clinic [    ]
   ii. Public: [    ]
   iii. Government employed [    ]
   iv. Faith based organization [    ]
   v. Employed by the university[    ]
   vi. Employed by the ministry of defense (army) [    ]

5. Highest level of education attained
   i. Undergraduate [    ]
   ii. Post graduate [    ]
   iii. PHD [    ]

6. Type of Specialty
Level of knowledge on preventive dental care among Dentists in Nairobi

0= fully disagree
1= Disagree
2= don’t know
3=Agree
4=Fully agree

Caries-related

1. The frequency of sugar consumption plays a greater role in producing caries than does the total amount of sugar consumed. [  ]
2. Sealant is effective in the prevention of pit and fissure caries in newly-erupted molars [  ]
3. A restored tooth is more likely to be lost than is a sound one. [  ]
4. Examining a newly-erupted tooth with a sharp explorer will damage enamel rods and predispose the tooth to caries [  ]
5. A white- or brown-spot lesion that is visible on a wet tooth surface has penetrated all the way through the enamel [  ]

Fluoride-related

6. Fluoridation of drinking water in regions with low fluoride is an effective, safe, and efficient way to prevent dental caries. [  ]
7. Rinsing teeth with less water after tooth brushing will increase the effect of fluoride that is in the toothpaste. [  ]
8. The use of fluoride toothpaste is more important than brushing technique in preventing caries. [  ]
Attitude towards preventive dentistry

(Answer Yes/No)

Community-related attitudes
Do you think oral hygiene instructions are important to the patients? 1. Yes [ ] 2. No [ ]
Do you recommend community water fluoridation in low fluoride areas? 1. Yes [ ] 2. No [ ]

Dentist-related attitudes
Do you recommend application of Fissure Sealants? 1. Yes [ ] 2. No [ ]
Do you think topical fluoride and fluoridated dentrifices are important? 1. Yes [ ] 2. No [ ]

Do you recommend the use of dental floss to your patients? 1. Yes [ ] 2. No [ ]
Would you advocate for prophylaxis polishing? 1. Yes [ ] 2. No [ ]

3. Which of the following practices do you carry out?

(Answer Yes/No)
Oral hygiene instructions and motivation 1. Yes [ ] 2. No [ ]
Application of topical fluoride 1. Yes [ ] 2. No [ ]
Application of fissure sealants 1. Yes [ ] 2. No [ ]
Scaling and Polishing 1. Yes [ ] 2. No [ ]
Biannual dental checkups 1. Yes [ ] 2. No [ ]