KNOWLEDGE, ATTITUDE AND USE OF MOUTHWASH AMONG DENTAL AND MEDICAL STUDENTS OF THE U.O.N

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A community dentistry research proposal submitted in partial fulfillment of the requirement for the Bachelor of Dental Surgery degree of the University of Nairobi.

Study duration - Apr - Oct 2009

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SUMMARY

**Background:** Tooth brushing is effective in preventing dental diseases. Mouthwash can be used as an adjunct in addition to this. There is little information regarding mouthwashes among college students in Kenya.

**Study design:** A descriptive cross-sectional study will be carried out from the month of April 2009 to the month of October 2009.

**Objective:** To determine the knowledge, attitude and use of mouthwashes among medical and dental students.

**Study area:** The study will be conducted in the School of Medicine and School of Dental Sciences of the U.O.N.

**Methodology:** The study population will comprise 80 undergraduate students in the School of Medicine and Dental science. Stratified random sampling method will be used to select the sample. Self-administered questionnaires will be used to collect data.

**Perceived benefit:** Through this research, a health program can be put in place to educate students on the various types of mouthwashes available and the role in prevention of oral diseases. This knowledge can be passed on to the community.
INTRODUCTION

Mouthwash is a product used as an adjunct to Oral hygiene practices as an antiseptic and anti-plaque agent.

Periodontitis is very common, and is widely regarded as the second most common disease worldwide, after dental decay, and in the United States has a prevalence of 30-50% of the population, but only about 10% have the severe form.(1)

Mouthwashes claim to kill the bacterial plaque which cause periodontal diseases, Dental caries, and bad breath. Anti-cavity mouth rinses use fluoride to protect against tooth decay. However, it is generally agreed that the use of mouthwash does not eliminate the need for both toothbrush and flossing(2).

The aim of this study is to determine the knowledge, attitude and practice of mouthwash use among dental and medical students. The results may then be used to design programs for increasing the knowledge on mouthwashes among the students. This may then spill over to the community as a means of enhancing the prevention of dental caries and periodontal disease through the non-knowledgeable individuals.
LITERATURE REVIEW

The first known reference to mouth rinsing is in the Chinese medicine, about 2700 BC, for treatment of gingivitis. Later, in the Greek Ancient Greece and Roman periods, mouth rinse following mechanical cleansing became common among the upper classes, and Hippocrates recommended a mixture of salt, alum, and vinegar.

A Jordan study among 557 students revealed that 6% of them used mouthwashes though majority of them did not have enough knowledge on mouthwashes, 2% reported using dental floss, and 7% reported using toothpick as extra aids for oral hygiene. Another study by Zhu L et al 2003 revealed that 44.4% of the respondents brushed their teeth at least twice a day but only 17% used mouthwashes. Subjects who saw a dentist during the previous 12 months or two years were 31.3% and 35.3% for 12-year-olds and 22.5% and 20.2% for 18-year-olds, respectively. Nearly one third (29%) of 12 year-olds and 40.5% of 18-year-olds would visit a dentist in case of signs of caries but only when in pain. Nearly half of the participants (47.2%) had never received any oral health care instruction on mouthwashes. A study by Sgan-Cohen revealed that Only 68.5% of the school-teachers were aware of the anti-bacterial role of fluoride mouthwashes, and only a small minority knew of fluoride's potential in healing incipient caries. Teachers seemed less motivated to being involved in dental health school programmes which involved dedicating school time and their active involvement, such as fissure sealant programmes at school, supervision of brushing and flossing, and school mouth rinsing programmes.

Halitosis is caused by the several bacterial species in the mouth through anaerobic breakdown of certain amino acids with subsequent production of foul gases. The use of antibacterial mouthwash and brushing can be used to eliminate the bacteria and hence improve the oral hygiene of an individual.

The different types of mouthwashes include fluoride rinses, Listerine, chlorhexidine and povidine iodide mouthwashes among others. Active ingredients in commercial brands of mouthwash can include thymol, eucalyptol, hexetidine, methyl salicylate, menthol, chlorhexidine gluconate, benzalkonium chloride, cetypyridinium chloride, methylparaben, hydrogen peroxide, domiphen bromide and sometimes fluoride, enzymes and calcium.

Ingredients also include water, sweeteners such as sorbitol, sucralose, sodium saccharine, and xylitol (which doubles as a bacterial inhibitor). The indications of mouthwashes include: in the treatment of gingivitis, periodontitis, halitosis and in the maintenance of oral hygiene, particularly following periodontal and other oral surgical procedures or in mentally or physically handicapped patients.
They also reduce the duration and severity of both apthous ulceration and oral ulceration caused by mechanical or chemical injuries e.g. orthodontic appliances. Common use involves rinsing the mouth with about 10-15ml of mouthwash two times a day after brushing. In the morning and at night for best results. The wash is typically swished or gargled for about half a minute and then spat out\textsuperscript{10}.

The side effects of mouthwashes include burning sensation in the cheeks, teeth and gums. Mouthwash swallows by children leads to alcohol poisoning or fluoride overdose. Recently, some assumptions were made of a possible carcinogenic character of alcohol used as a carrier for the flavor, to provide "bite", and to contribute an antibacterial effect used in mouthrinses\textsuperscript{11}. 
PROBLEM STATEMENT

It is possible to control dental diseases through regular tooth brushing, flossing and use of mouthwashes. This can be enhanced through increasing knowledge on disease prevention of the medical and dental practitioners and in the process change their attitudes.

Dental and medical students are the study population because they are the ones who will be encountering conditions presenting in the oral cavity.

Poor oral hygiene has consequences that impact people's lives in different ways. Some suffer halitosis and this may compromise their social relations with friends and family. Many are turned into introverts. In this light therefore the socio-economic impact of oral problems is worth mentioning since some of the causes can be prevented especially via use of mouthwashes. Dental treatment is expensive and prevention would be of benefit to the public.

JUSTIFICATION OF THE STUDY

There is scarcity of information regarding the knowledge, attitude and the use of mouthwashes in Kenya. The study aims at determining the knowledge, attitude and use of mouthwashes among medical and dental students of the University of Nairobi.

Educating the students will be useful as they will in turn educate the general population. Dental and medical students are an important group in the prevention of Diseases as they encounter various groups of people once they become professionals. They can also educate the community during community health outreach programs.

The information obtained could be used by policy makers to develop strategies aimed at improving the oral hygiene of public.
OBJECTIVES

MAIN OBJECTIVE

- To determine the level of knowledge, attitude and use of mouthwash among dental and medical students of the University of Nairobi

SPECIFIC OBJECTIVES

1. To determine the knowledge on mouthwash among Medical and Dental students in the school of Dental sciences and the School of Medicine.
2. To determine the attitude toward mouthwashes among Medical and Dental students in the school of Dental sciences and the School of Medicine.
3. To determine the practices on mouthwashes among dental and medical students of the U.O.N

HYPOTHESIS

1. Less than 50% of the students use mouthwashes.
2. Dental students are more knowledgeable on mouthwashes than medical students.
### VARIABLES

#### SOCIO DEMOGRAPHIC

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#### INDEPENDENT

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#### DEPENDENT

<table>
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<th>Variable</th>
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<tr>
<td>Practice of mouthwash</td>
<td>Frequency of use of mouth wash, Type of mouthwash used, Duration of use of mouthwash</td>
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</table>
MATERIALS AND METHODS

STUDY POPULATION

This study will include medical and dental undergraduate students of the University of Nairobi.

STUDY AREA

This study will be conducted at the school of dental sciences and the school of medicine.

The school of dental sciences is one of the campuses of the University of Nairobi. It is located in Nairobi City opposite the Nairobi hospital. The school has approximately 130 undergraduate students.

The school of medicine, being one of the campuses of the U.O.N is also within Nairobi city and is next to Kenyatta National Hospital, approximately one kilometer from the Central Business District. The school has approximately 1,500 undergraduate students.

STUDY POPULATION

All undergraduate students admitted in the schools of medicine and dental surgery.

STUDY DESIGN

This study will be a descriptive cross sectional study.

SAMPLE SIZE

The sample size will be computed using the following formula.

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

Where:  \( N = \) sample size

\( Z = \) Z-value = 1.962

\( P = \) prevalence = 6%
C = confidence level = 0.05

\[ N = 1.96 \times 1.96 \sqrt{0.06(1-0.06)} = 86 \]

0.05^2

The student population at the school of medicine and dental surgery is less than ten thousand. Therefore, the desired sample size for the population less than ten thousand will be estimated from the following formula:

\[ n_f = \frac{n}{1 + n/N} \]

Where:

- \( n \) = desired sample size for population more than ten thousand
- \( n_f \) = desired sample size for population more than ten thousand.
- \( N \) = estimated population size.

\[ n_f = 86 \]

\[ 1 + \frac{86}{1000} \text{ (since the student population is less than ten thousand)} \]

\[ n_f = 80 \]

**SAMPLING METHOD**

A stratified random sampling method will be used to select subjects from the School of Dental Sciences and the School of Medicine. Since the sample size is 80, 40 Students will be picked from the School of Dental Science and 40 from the School of Medicine. This will then be distributed equally among the different level in each year. Students will be randomly selected as follows; ten students in level one, 10 in level two, 10 in level three and 10 in level four from the School of Dental Sciences. From the School of Medicine 8 students will be picked from level one to level five.

**INCLUSION CRITERIA**

All dental and medical students who consent to participate in the study.
EXCLUSION CRITERIA

Students not admitted in any of the two courses.

Students who do not consent to the study.

DATA COLLECTION INSTRUMENTS AND TECHNIQUES.

A self administered questionnaire (Appendix I) will be used to collect data. The questionnaire will be administered by the researcher and collected back once the students have filled the required information.

DATA ANALYSIS AND PRESENTATION.

The data will be analyzed using SPSS and MS EXCEL. Cross tabulation will be used to compare different variables. Data will be presented by use of charts, table and texts.

ETHICAL CONSIDERATIONS.

1. This research proposal will be submitted to the University of Nairobi/ Kenyatta National Hospital (KNH) ethical and research committee for approval.

2. Permission to conduct research will be sought from the University of Nairobi.

3. Informed consent will be sought from all the subjects prior to the study.

4. Confidentiality of all information given will be guaranteed.

4. Subjects will be free to decline from participating in the study and to withdraw participation at any given time.

PERCEIVED BENEFITS

1. A health program may be put in place to educate the students on the various types of mouthwashes and the role in preventing dental diseases.

2. This research proposal is in partial fulfillment for the award of Bachelor of Dental sciences Degree (BDS) of the University of Nairobi

PROBLEMS ANTICIPATED

1. Financial constrains.

2. Inadequate time to do the study.
## BUDGET

### PROPOSAL

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**GRAND TOTAL = 3150**
REFERENCES


Appendix I

KNOWLEDGE, ATTITUDE AND USE OF MOUTHWASHES AMONG DENTAL AND MEDICAL STUDENTS OF THE UNIVERSITY OF NAIROBI.

QUESTIONNAIRE

This questionnaire is for a community dentistry project, please answer the following questions.

School

Sex (Male/Female)

Age

Q1. How often do you brush your teeth?
   1. less than once per day
   2. once per day
   3. twice per day
   4. More than twice per day.

Q2. What do you use for cleaning your teeth?
   1. Brush + toothpaste
   2. Dental floss
   3. Mouthwash
   4. All the above
   5. Others (specify).

Q3. What do you understand by the term mouthwash?
   1. A fluid used to wash the mouth.
2. A drug.

3. An oral hygiene, antiseptic and antiplague agent.

4. Other (specify)

Q4. Do you know any dental disease that can be prevented by use of mouthwash?

...............................................

If yes which ones

...............................................

Q5. Has use of mouthwash ever been recommended to you?

Yes........No........

If yes who recommended?

1. Dentist

2. Medical doctor

3. Friend

4. Partner

Why was it recommended? Because of:

1. Bad breath

2. Dental disease

3. Sore throat

4. After surgery.

Q6. In your opinion is use of mouthwash harmful to teeth and the gum? (Tick one option)

   Yes......

   No......
Q7. Do you practice the use of mouthwash? ....................

If yes answer the following questions

If no go to question 11

Q8. Which type(s) of mouthwash do you use?

.................................................................

.................................................................

Q9. At what times do you practice the use of mouthwash?

1. Before brushing?
2. After brushing
3. After meals
4. Before going to bed
5. Other (specify).................................................................

Q10. How often do you use the mouthwash?

1. Daily
2. Weekly
3. More than three times a week
4. Other (specify).................................................................
Q11. Why don’t you use mouthwash?

1. It is difficult
2. I lack time
3. It is not necessary
4. It is expensive
5. Other (specify)………………………………………

Q12. Where can you get mouthwashes?

1. Supermarket
2. Dental clinic
3. Hospital
4. Pharmacy
5. I don’t know
6. Others (specify)…………………..

Q13. Given instruction on how to perform the use of mouthwash, would you advise other students to practice the use of mouthwashes?

Yes……

No……

Please explain your answer…………………………………………………………………………………………………………………..

…………………………………….

THANK YOU!
APPENDIX II

KNOWLEDGE, ATTITUDE AND USE OF MOUTHWASH AMONG DENTAL AND MEDICAL STUDENTS OF THE UNIVERSITY OF NAIROBI.

CONSENT FORM

I am an undergraduate student at the University of Nairobi's school of Dental Sciences. I wish to request for your participation in a study that will form part of my degree course work. The study involves filling out a questionnaire. Results will be recorded and analyzed for research purposes only. No invasive procedure will be undertaken on you. Your participation in the study will be highly appreciated.

Thank you.

SIMIYU N. BENJAMIN

I do hereby freely consent to participate in the mentioned study.

Student.................................has explained the procedure to be carried out. I understand that no harm will be caused and I can withdraw at any time without any adverse consequences to me. I am informed and understand that all information I give will be treated with utmost confidence.

Signed

.............................................

Participant.