KNOWLEDGE, ATTITUDE AND ORAL HYGIENE PRACTICES AMONG UNIVERSITY OF NAIROBI NURSING STUDENTS

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Study duration:
April to October, 2010.

A COMMUNITY DENTISTRY RESEARCH PROJECT PROPOSAL SUBMITTED IN PARTIAL FULFILMENT FOR THE DEGREE OF BACHELOR OF DENTAL SURGERY, AT THE UNIVERSITY OF NAIROBI.
ABBREVIATIONS

ANUG: Acute necrotizing ulcerative gingivitis

BDS: Bachelor of Dental Surgery

KNH: Kenyatta National Hospital

MRes: Master of Research

SDS: School of Dental Sciences

SON: School of Nursing

UON: University of Nairobi
SUMMARY:

Background: Periodontal diseases are of major public health concern due to the prevalence in the world population. Proper plaque control has been reported to prevent the occurrence of these diseases. This can be done through proper oral hygiene practices.

Objective: To determine the level of knowledge, attitude and oral hygiene practices among nursing students in the university of Nairobi.

Study population: Nursing Students at the University of Nairobi.

Study design: A descriptive cross-sectional study.

Study area: School of Nursing, University of Nairobi.

Research problem: Knowledge, attitude and oral hygiene practices.

Aim of the study: The aim of this study is to determine the knowledge, attitude and oral hygiene practices among University of Nairobi nursing students.

Methodology: A total of 75 from the school of nursing will be selected using stratified random sampling. A self administered questionnaire will be used to collect the data.

Perceived benefits

The data from this study could be used by policy makers to formulate oral health education strategies aimed at improving oral health knowledge, attitude and practices.
1.0 INTRODUCTION:

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. The research reports from East Africa on periodontal diseases show a variation in the prevalence of the diseases in the countries. Studies from Uganda shows that ANUG prevalence is 41% and early onset periodontitis is 28.8%. While reports from Kenya gingivitis prevalence is 25% and ANUG is 0.15%-0.28%. However no research reports have been given on the study of knowledge, attitude and practice of oral hygiene among nursing students.

The aim of this study is to assess the level of knowledge and attitude towards oral health and to evaluate the practice of oral hygiene among the University of Nairobi Nursing students.

The data from this study may be beneficial to the policy makers who could use it to formulate oral education strategies aimed at improving oral health knowledge, attitude and practices in the society.

1.1 LITERATURE REVIEW

The occurrence of periodontal diseases in man is a global problem, thus affecting all continents, for example, Europe, Asia and Oceania, North America, for example, Brazil, and Africa. Although periodontal diseases occur commonly among adults they are also prevalent in children and adolescents.

Previously, it has been reported that periodontal diseases were among the most widespread diseases in mankind. On the basis of earlier epidemiological studies, it loss. It was therefore considered that the periodontal disease progresses in a “linear or continuous model”. However, based on other studies, it was suggested that the periodontal disease may behave differently either as a “random burst model” or as an “asynchronous multiple burst model”. When periodontal disease progression was considered as a multilevel system, the “linear” and “burst” models were found to be a manifestation of the same phenomenon, that “some sites with the disease improve while others progresses, in a cyclical manner.”
Evidence had showed that strong knowledge of oral health demonstrates better oral care practice\textsuperscript{17}. Similarly for those with more positive attitude towards oral health are influenced by better knowledge in taking care of their teeth. Studies have showed that appropriate oral health education can help to cultivate healthy oral health practice\textsuperscript{18}. The change to healthy attitude and practice can be achieved by giving adequate information, motivation and practice of the measures to the subjects\textsuperscript{17}. In order to create such health education, the assessment of knowledge, attitude and practice is essential\textsuperscript{19}.

The most widely accepted methods for controlling periodontal diseases and the associated conditions are personally and professionally applied mechanical oral hygiene measures \textsuperscript{20}. Thus, toothbrushing is the most widely used mechanical means of personal plaque control throughout the world\textsuperscript{21}.

Dental plaque is of clinical importance because it is the primary etiologic agent in the development of dental carries\textsuperscript{22-23} and periodontal diseases\textsuperscript{24-25}. There is a higher prevalence of gingivitis in children and slight to moderate periodontitis due to poor oral hygiene standards\textsuperscript{21}.

Oral hygiene practiced by individuals help reduce plaque buildup. This leads to a reduction in the chances of plaque induced gingivitis occurring and subsequent development of periodontitis. This can be done by personal oral hygiene practiced by the individual. Professional debridement performed by the dentist or hygienist adds to removal of plaque. However, plaque starts to build up a few hours after it has been removed. Therefore effective removal of dental plaque is essential to gingival and periodontal health throughout life. Plaque removal should be at least once in twenty four hours\textsuperscript{26}.

A Jordan study among 557 students revealed that 6\% of them used mouthwashes, 2\% reported using dental floss, and 7\% reported using tooth pick as extra aids for oral hygiene\textsuperscript{27}.

Acceptable plaque control has been to reduce inflammation even in the absence of sub-gingival debridement\textsuperscript{28}. Chronic gingivitis is likely to lead to periodontitis in susceptible individuals\textsuperscript{29}. Because gingivitis can be prevented or reversed by a combination of personal and professional care, it is logical to state that periodontitis may be similarly prevented by good personal oral hygiene and routine professional care.
Research has demonstrated that good plaque control is effective in preventing periodontal diseases and halting its progress when combined with professional therapy. Periodontal therapy is ineffective in the absence of adequate home care.

Professional cleaning without patient plaque control and willingness to comply with a periodontal maintenance regimen makes the surgical techniques less effective. Plaque control without professional therapy is of limited effectiveness in treating periodontal diseases.

**Methods of carrying out personal oral hygiene:**

**Tooth brushing:**

**Manual tooth brushes:** Lifespan of a tooth brush varies. Most dentists recommend that a tooth brush should be used for three months. But according to research done; new brushes performed better than old tooth brushes. Contrary to these finding another study reported that 3 months old brushes performed as well as new tooth brushes and that brush wear was unrelated to plaque removal efficiency. The life span can be explained, if the type and quality of the material used to in making the brush bristles and the number of bristles in a given brush.

**Electromechanical Tooth Brushes:** Refers to those brushes that use a powered brush head. Several studies have reported that electromechanical tooth brushes were more effective than manual brushes in removing stain. These brushes are more effective in removing interproximal plaque than manual brushes.

**Interdental Cleaning Aids:**

Manual tooth brushing alone does not have much effect on interdental areas. Brushing reduces gingival bleeding by 35% whereas combination of brushing and floss reduce bleeding by 67%. Most patients do not floss daily as recommended and those who do not floss have more plaque and calculus accumulation than those who do.

**Dental floss:** Most common interdental cleaning aid, it is available in a variety of different sizes and configuration, Exist as waxed or unwaxed. Waxed and unwaxed floss are equally effective plaque removal.
Automated Interdental Cleaners: It removes interproximal plaque by means of rotating microfilaments. Studies suggest that it is as effective as finger flossing\textsuperscript{47-48}.

Tooth picks and wood sticks: These aids are better for situations in which there is slightly receded interdental papilla. There is no difference in efficacy of plaque removal when comparing triangular wood stick, dental floss and single tufted brushes\textsuperscript{49}.

Some studies have found round tooth pick to be inferior to either triangular or dental floss.

Interdental Brushes: A number of studies have demonstrated that the interdental brush is superior to floss and triangular wood sticks in cases where the embrasure is open enough to permit their use\textsuperscript{50-51}.

Chemical Plaque Control: A variety of topical antiseptic agents are commercially available as mouth rinses to aid in plaque control. Most common are categorised as follows: Bisguanides, essential oils, metallic ions, quaternary ammonium compounds, sanguinarine and triclosan.
1.2 STATEMENT OF THE RESEARCH PROBLEM

Periodontal diseases though preventable are prevalent in the world. This could be due to high poor oral hygiene leading to the accumulation of dental plaque. With proper oral hygiene, these diseases can be controlled. To achieve good oral hygiene is important for the patient to have proper knowledge, attitude and oral hygiene practices. 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 paramedics. The nurses are better placed in disseminating this knowledge, since they are closer to patients and the public as compared to other health care providers.

1.2 JUSTIFICATION OF THE STUDY

There is no sufficient data on knowledge, attitude and oral hygiene practice among nursing students. The aim of the study is to determine, the knowledge, attitude and oral hygiene practices of the nursing students at the university of nairobi. The data obtained from the study may be utilized by policy makers to formulate oral education strategies aimed at improving oral health knowledge, attitude and practices.

1.4 OBJECTIVES

1.4.1 General objective:

To determine the level of knowledge, attitude and practice of oral hygiene among students in the School of Nursing.

1.4.2 Specific objectives:

1. To determine knowledge on oral hygiene among University of Nairobi Nursing students.
2. To determine the attitude of University of Nairobi nursing students towards oral hygiene.
3. To determine oral hygiene practices of University of Nairobi nursing students.
1.5 RESEARCH HYPOTHESIS

Nursing students have adequate knowledge, attitude and practice of oral hygiene.

1.6 VARIABLES

<table>
<thead>
<tr>
<th>Socio-demographic factors:</th>
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<tbody>
<tr>
<td>VARIABLE</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Level of study</td>
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</table>

1.6.1 Independent variables

<table>
<thead>
<tr>
<th>Attitude towards oral hygiene practices</th>
<th>Perception towards oral hygiene practices</th>
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</thead>
<tbody>
<tr>
<td>Knowledge on oral hygiene practices</td>
<td>Understanding on oral hygiene practices</td>
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</table>

1.6.2 Dependent Variables

| Practice of Oral Hygiene | Method of carrying out oral hygiene: brushing, flossing, toothpicks, mouthwashes |
2.0 METHODOLOGY

2.1.1 Study area

The study will be conducted at the UON School of Nursing, which is one of the campuses of the UON within Nairobi City and is next to Kenyatta National Hospital, approximately two kilometers from the Central Business District. The school has approximately 300 undergraduate students. It is the premier training institution in the country. It trains students at the main hospital in the country; KNH which is the referral hospital in the country. Students are awarded a degree in BSN (Bachelor of science in nursing). After which they either serve in government health institutions or in private hospitals in the country, and in the world over.

2.2.2 Study population

This study population includes all students in the, School of Nursing.

2.3.3 Inclusion criteria

Nursing students who consent to participate in the study.

2.4.4 Exclusion criteria

Students in the College of Health Sciences not admitted in the School of Nursing.

Nursing students who do not consent to the study.

2.5.5 Study design

This will be descriptive cross sectional study.

2.6.6 Sample

A prevalence rate of 7% will be used in this study, and the sample size will be determined using the following formula:
Sample size

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

Where:

N  Study population

Z  value is 1.96

P  Prevalence = 7%

C  Confidence level = 0.05

\[ 1.96^2 \times \frac{0.07(1-0.07)}{0.05^2} = 100 \]

Since the population study is less than 10,000 patients, the following formula will be used:

\[ nf = \frac{n}{1 + \frac{n}{N}} \]

Where N is the entire population, n is sample size calculated from the previous formula (for a population > 10,000) and nf is the desired simple size (for a population < 10,000).

\[ nf = 100/(1+100/300) = 75 \]

2.7.7 Sampling method

Stratified random sampling method will be used to select the study population. A self-administered questionnaire will be uniformly distributed to the nursing students in the various levels. Since the sample size in this study is 75 students, therefore the number of questionnaires shall be equally distributed (18 questionnaires per level) among the four levels in Nursing School.
2.8.8 Data collection

A self administered questionnaire (Appendix 4) 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 on the same day of distribution.

2.9.9 Data analysis and presentation

Data analysis will be done using Ms-Excel and SPSS (13.0) software and presentation of results in the form of tables, graphs and charts, frequencies and crosscharts.

2.10.10 study limitations

Limited time to do the study

Inadequate finances to carry out the study.

2.11.11 Ethical considerations

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

2. A written Informed consent will be sought from all the subjects prior to the study.

3. 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 without victimization.
2.12.12 Perceived benefits

i. The data from this study could be used by policy makers to formulate oral health education strategies aimed at improving oral health knowledge, attitude and practices.

ii. The project is to be submitted by the researcher in partial fulfilment of the requirements for the Bachelor of Dental Surgery degree course at the University of Nairobi.
APPENDIX 1:

WORK PLAN

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<th>Task</th>
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<tr>
<td>March</td>
<td>Introduction</td>
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<tr>
<td>April</td>
<td>Literature Review</td>
</tr>
<tr>
<td>May</td>
<td>Study Methodology</td>
</tr>
<tr>
<td>June</td>
<td>Completion of Proposal Writing; Ethical Approval</td>
</tr>
<tr>
<td>July</td>
<td>Data Collection and Compilation</td>
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<tr>
<td>August</td>
<td>Data Analysis</td>
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<tr>
<td>September</td>
<td>Presentation of Complete Project Work.</td>
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APPENDIX 2:

BUDGET

Proposal development

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Field work expenses

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<td>Binding costs</td>
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<td>200</td>
</tr>
<tr>
<td>Miscellaneous costs</td>
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<td>-</td>
<td>500</td>
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Final report

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<tbody>
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<tr>
<td>Final reports</td>
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<td>320</td>
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<tr>
<td>TOTAL</td>
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<td>6960</td>
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Sponsorship: self sponsored.


APPENDIX 4:

KNOWLEDGE, ATTITUDE AND ORAL HYGIENE PRACTICES AMONG UNIVERSITY OF NAIROBI NURSING STUDENTS

QUESTIONNAIRE

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

FILL THE BLANKS SPACES AND TICK THE APPROPRIATE RESPONSE

Gender:  
Male............  Female............

Level of study:  
Level I............  Level II............  Level III............  Level IV............

The following questions seek to find out how much you know about oral health.

1. Plaque is  
i. The name of a tooth  
ii. A common name for dirt on tooth surfaces  
iii. A name of a disease  
iv. Bacterial/germ deposits on tooth surfaces  
v. Do not know

2. Bleeding of gums is usually caused by  
i. Eating hard food  
ii. Plaque present near the gums  
iii. All the above  
v. Do not know

3. Calculus/tartar is  
i. A part of the jaw bone  
ii. Hard deposits on the tooth surface
iii. All of the above
iv. Others, specify
v. Do not know

4. A periodontal pocket is
   i. A deep opening alongside the root of a tooth
   ii. An opening between two teeth where saliva is stored
   iii. All of the above
   iv. Do not know

5. Plaque can best be removed by
   i. Going to the dentist or dental therapist regularly
   ii. Cleaning one’s teeth daily
   iii. Rinsing the mouth with water
   iv. Rinsing with a mouth wash
   v. Do not know

6. You should change your toothbrush
   i. After 3-4 months
   ii. After one year
   iii. When the bristles start to bend
   iv. When the bristles are getting discolored
   v. Do not know
   vi. Others specify ______________________

7. Healthy gums appear
   i. Red and shiny
   ii. Pink and firm
   iii. Do not know

8. Calculus/tartar can be removed by
   i. A dentist or a trained dental personnel
   ii. Thorough teeth cleaning
   iii. Do not know
9. If your gums bleed you should stop cleaning the teeth
   I Disagree
   ii Agree
   iii Do not know

10. Have you ever heard of dental floss?
    YES
    NO

11. How many times do you think one needs to floss in a day?
    Once
    Twice
    Four times
    Not sure

12. Have you ever heard of interdental brushes?
    YES
    No

The following questions are related to cleaning one’s teeth.

13. Do you clean your teeth?
    i. No
    ii. Yes

14. How often do you clean your teeth?
    i. Don’t know
    ii. Sometimes
    iii. Once a day
    iv. Twice a day
    v. More than 2 times a day

15. With what do you clean your teeth?
    i. With a toothbrush
    ii. With a chewing stick
    iii. Others specify..........................

16. What do you put on your cleaning device?
    i. Nothing
    ii. Toothpaste
    iii. Others...............................

17. Did you clean your teeth yesterday afternoon?
    i. No
    ii. Don’t know or remember
    iii. Yes

18. Did you clean your teeth yesterday evening?
    i. No
    ii. Yes
    iii. Don’t know or remember

19. Did you clean your teeth yesterday morning?
    i. No
    ii. Yes
    iii. Don’t know or remember

20. Did you clean your teeth this morning?
    i. No
    ii. Yes
    iii. Don’t know or remember

21. I find having to brush my teeth everyday
    i. Necessary
    ii. Unnecessary
    iii. Don’t know
The following questions relate to your attitude towards oral hygiene.

22. Are your teeth important to you?
   No
   Yes

23. Are you satisfied with the appearance of your teeth?
   Very
   Quite
   They look good
   Not particular

24. How would you describe the state of your teeth and gums? Is it "excellent", "very good", "good", "average", "poor", or "very poor"
   Excellent
   Very good
   Good
   Average
   Poor
   Very poor
   Don't know

25. If a dentist were to examine your mouth cavity tomorrow, what do you think he would say to you?
   (Indicate all statements)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;You have to brush your teeth better&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Tartar must be removed&quot;</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>&quot;You need fillings&quot;</td>
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<tr>
<td>&quot;You must have a tooth out&quot;</td>
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<tr>
<td>&quot;You need a denture&quot;</td>
<td></td>
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<tr>
<td>&quot;Your teeth are fine&quot;</td>
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</table>

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!!
APPENDIX 5:

CONSENT FORM

I am MARANGA M. JOSIAH, an undergraduate Dental Surgery Student in the University of Nairobi. I am currently conducting research to find the level of knowledge, attitude and practice of oral hygiene among nursing students at the university of Nairobi School of Nursing.

Participation is voluntary and utmost confidentiality is assured.

Your participation in this study will be highly appreciated. (name is optional)

I.................................do hereby wilfully give consent for.................................to participate in this study.

Sign............................... Date...............................